Synology

Synology NAS User's Guide

Based on DSM 4.3

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Table of Contents

Chapter 1: Introduction

Chapter 2: Get Started with Synology DiskStation Manager

Install Synology NAS and DSM 8
Log into Synology DiskStation Manager 8
DiskStation Manager Appearance 9
Manage DSM with the Main Menu 11
Manage Personal Options 12

Chapter 3: Modify System Settings

Change DSM Settings 14
Change Network Settings 16
Modify Regional Options 18
Use Energy Saving Features 19

Chapter 4: Manage Storage Space

Volumes and Disk Groups 21
Repair Volumes or Disk Groups 23
Change RAID Type 23
Expand Volumes or Disk Groups 24
Data Scrubbing 25
SSD TRIM 25
iSCSI Targets and LUNs 25
Manage Hard Disks 27
SSD Cache 27
Hot Spare 28
Manage External Disks 28

Chapter 5: Manage Storage Space (for RS10613xs+)

Overview 29
Manage RAID Groups 29
Change RAID Types 31
Repair RAID Groups 31
Expand RAID Groups 31
Data Scrubbing 31
Manage Volumes 32
Repair Degraded Volumes 32
SSD TRIM 33
Manage iSCSI LUNs 33
Manage iSCSI Targets 34
Manage Hard Disks 34
Hot Spare 34
Storage Overview 34

SSD Cache 35
Manage External Disks 35

Chapter 6: Access your Synology NAS from the Internet

Use the EZ-Internet Wizard 36
Set Up Port Forwarding Rules for Router 37
Register DDNS for the Synology NAS 38
Access DSM Services via QuickConnect 39
Set up VPN Connection 40

Chapter 7: Enhance Internet Security

Prevent Unauthorized Connection with Firewall 41
Control the Outgoing Traffic of Services 42
Prevent Attacks over the Internet 43
Automatically Block Suspicious Login Attempts 44

Chapter 8: Set Up File Sharing

Enable File Sharing Protocols for All Platforms 45
Join Synology NAS to Directory Service 46
Host LDAP Service with Directory Server 47
Manage Users and Groups 48
Set Up Shared Folders 50
Define Windows ACL Privileges for Shared Folder 53
Index Shared Folder Contents 53

Chapter 9: Access Files from Anywhere

Access Files within the Local Network 54
Access Files via FTP 56
Access Files via WebDAV 57
Sync Files via Cloud Station 58
Access Files via File Station 59

Chapter 10: Back Up Data

Back Up Computer Data 62
Back up Data or iSCSI LUN on Synology NAS 64
Sync Shared Folder Contents between Synology NAS 66
Back up Synology NAS Data with Time Backup 66
Back up Data on USB Device or SD Card 67
Back up Data to Amazon Glacier 67

Chapter 11: Host Websites, Email Server, and Print Server

Use Web Station to Host Websites 68
Host Mail Server 69
Install Mail Station to Enable Webmail Service 70
Set Synology NAS as Print Server 71

Chapter 12: Discover Various Applications with Package Center

What Package Center Offers 72
Install or Buy Packages 72

Chapter 13: Share Photos, Videos, and Blogs with Photo Station

Install Photo Station 73
Enable Personal Photo Station 74
Photo Station Features 74

Chapter 14: Play Music with Audio Station

Install Audio Station 76
Manage Audio Station Settings 77
Audio Station Features 77

Chapter 15: Organize Videos and Record TV Programs with Video Station

Install Video Station 79
Before You Start 80
Video Station Features 80

Chapter 16: Download Files with Download Station

Install Download Station 82
Download Station Features 83

Chapter 17: Safeguard Your Environment with Surveillance Station

Install Surveillance Station 86
Manage Surveillance Station Settings 86
Watch Live View 88
Work with Timeline 90

Chapter 18: Provide Nonstop Service with Synology High Availability

Understand Synology High Availability 91
Install Synology High Availability 92
System Requirements 92
Create a High-Availability Cluster 93
More Information 93

Chapter 19: Create a Domain Name Server with DNS Server

Install DNS Server 94
Before You Start 94
DNS Server Features 95

Chapter 20: Manage Media Server and iTunes Service

Install DLNA Media Server 96
Manage DLNA Media Server 97
Install iTunes Server 97
Manage iTunes Server 98

Chapter 21: Perform Advanced Management Tasks

Check System Information 99
View System Logs 101
Monitor System Resources 102
Manage Bluetooth Devices 103
Automate Tasks 103
Update DSM 103

Receive Event Notifications 104
Access Applications with Independent Login 105
Index Multimedia Files for Applications 105
Reset Admin Password 106
Restore Synology NAS to Factory Defaults 106
Reinstall Synology NAS 107
Enable SNMP Service 107
Enable Terminal Services 107

Chapter 22: Communicate with Mobile Devices

Manage DSM Settings with DSM mobile 108
Use iOS, Android, and Windows Apps 108
Use Other Mobile Devices 109

Chapter 1

Introduction

Congratulations on your purchase of Synology NAS. Synology NAS is a multi-functional Network-Attached Storage server, serving as a file-sharing center within your Intranet. Moreover, it is specially designed for a variety of purposes, allowing you to perform the following tasks with the web-based Synology DiskStation Manager (DSM):

Store and Share Files over the Internet

Windows users, Mac users, and Linux users can easily share files within the Intranet or through the Internet. Unicode language support makes sharing files in different languages from Synology NAS simple.

Manage Files with Web-Based File Station

One of Synology DiskStation Manager's applications, File Station, can make it possible for users to manage their files on Synology NAS easily through a web interface. You can also access the files stored on Synology NAS with a mobile device.

Transfer Files via FTP

Synology NAS provides FTP service with bandwidth restriction and anonymous login. To transfer data safely, FTP over SSL/TLS and uninvited IP auto-block are also available.

Sync Files with Cloud Station

Cloud Station is a file sharing service that allows your Synology NAS to become a file sync center to sync files between multiple client computers. With the Cloud Station application installed on your computers, you can simply drop your office file to a folder on your office computer, and then open the same file automatically synced to your laptop.

Share Storage Capacity as iSCSI LUNs

You can designate portion of your Synology NAS volume space to be an iSCSI LUN, which will allow the iSCSI initiator to access the space like a local disk.

Back Up Files on Computer and Server

Synology NAS provides various backup solutions to back up computer data to Synology NAS, back up Synology NAS data or iSCSI LUN to an external hard drive, another Synology NAS, an rsync-compatible server, Amazon S3 server, HiDrive backup server, etc.

Enjoy Entertainment Content on the Server

Download Station allows you to download files from the Internet through BT, FTP, HTTP, eMule and NZB to Synology NAS. The Media Server and iTunes support allows computers or DMA devices within LAN to playback multimedia files on Synology NAS [1].

With the USBCopy or SDCopy function, you can press the Copy button on your Synology NAS to instantly copy files from a camera or SD card to Synology NAS.[2]

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[1] For recommended peripheral models, including hard drive, USB printer, DMA, and UPS, please visit **www.synology.com**.

[2] USBCopy or SDCopy is supported on specific models only. Visit **www.synology.com** for more information.

Organize Videos with Video Station

Video Station allows you to organize your collection of movies, TV shows, and home videos into a media platform on which you can watch and play video clips, live stream and record digital TV programs with a USB DTV dongle plugged into your Synology NAS, view and edit video metadata whose information is retrieved automatically from the Internet. You can also stream videos to your iPhone or iPad for playback.

Share Photos, Videos, and Blogs with Photo Station

Photo Station gives you the freedom to share photos and videos over the Internet without complicated upload steps. Album control ensures the content is shared with the right persons. Visitors can leave comments for your photos. Furthermore, a brand new blogging system is integrated for you to easily share your life and thoughts over the Internet.

Enjoy Music Anytime and Anywhere

Audio Station allows you to listen to music stored on the Synology NAS, from a connected iPod, or even stream Internet Radio stations. In addition, you can stream music from the Synology NAS with a web browser over the Internet.

Host Websites

The Virtual Host feature allows you to host up to 30 websites using Web Station, with PHP and MySQL supported.

Record Videos with IP Cameras

Surveillance Station allows you to manage, view, and record videos from multiple IP cameras over the network. By accessing the web-based management interface of Surveillance Station, you can watch the real-time image the camera is monitoring, and record videos continuously, in motion-detection mode, or in alarm-recording mode.

Discover More Apps with Package Center

Package Center brings intuitiveness and convenience for users to easily install and update a variety of applications (which are packed into packages). Just browse all available applications and select the ones that best suit your needs. All can be done with just a few clicks.

Print Server

USB or network printers connected to your Synology NAS can be shared by client computers over the local area network. AirPrint support allows you to print to the printer from an iOS device, while Google Cloud Print support allows you to print to the printer when you are using Google products and services.[1]

Provide Centralized Authentication with RADIUS Server

Remote Authentication Dial-In User Service (RADIUS) is a network protocol that provides centralized authentication, authorization, and accounting for wired or wireless network access. If your network switch or wireless router supports RADIUS for authentication, you can set up RADIUS Server and use Synology NAS local system accounts, AD domain accounts or LDAP service accounts to access your home wireless network.

Online Resources

If you cannot find what you need here, please see **DSM Help** or take a look at Synology's online resources below.

- **Knowledge Base:** www.synology.com/support
- **Forum:** forum.synology.com
- **Download Center:** www.synology.com/support/download.php
- **Technical Support:** www.synology.com/support/support_form.php

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[1] For recommended peripheral models, including hard drive, USB printer, DMA, and UPS, please visit **www.synology.com**.

Chapter 2

Get Started with Synology DiskStation Manager

This chapter explains how to log in to Synology NAS' web-based management UI, **Synology DiskStation Manager (DSM)**, customize your own desktop, manage its taskbar and widgets, and use the **Main Menu** to access DSM settings and applications. For more detailed instructions, please see **DSM Help**.

Install Synology NAS and DSM

For more information about setting up Synology NAS and installing DSM, see the *Quick Installation Guide* for your Synology NAS model available at Synology's **Download Center**.

Log into Synology DiskStation Manager

You can log into DSM with a web browser using either of the following methods:

To log in with Web Assistant:

1 Make sure your computer is connected to the same network as the Synology NAS and can access the Internet.

2 Open a web browser on your computer and go to **find.synology.com**.

3 Web Assistant will find your Synology NAS within the local network. Click **Connect** to go to the login screen.

To log in with the server name or IP address:

1 Make sure your computer is connected to the same network as your Synology NAS.

2 Open a web browser on your computer, enter any of the following in the address field, and then press Enter on your keyboard:

- **http://Synology_Server_IP:5000**
- **http://Synology_Server_Name:5000/** (or **http://Synology_Server_Name.local:5000/** on a Mac)

Synology_Server_Name should be replaced with the name you set up for Synology NAS during the setup process. If you choose **One-step Setup** during the setup process, the **Synology_Server_Name** will be **DiskStation**, **CubeStation**, **USBStation**, or **RackStation**.

3 Enter your user name and password, and click **Login**. The default password for **admin** is empty. If you want to save your login information and log in automatically next time, tick **Remember me** before logging in.

Note: To ensure your connection to DSM runs smoothly, please use the following browsers.

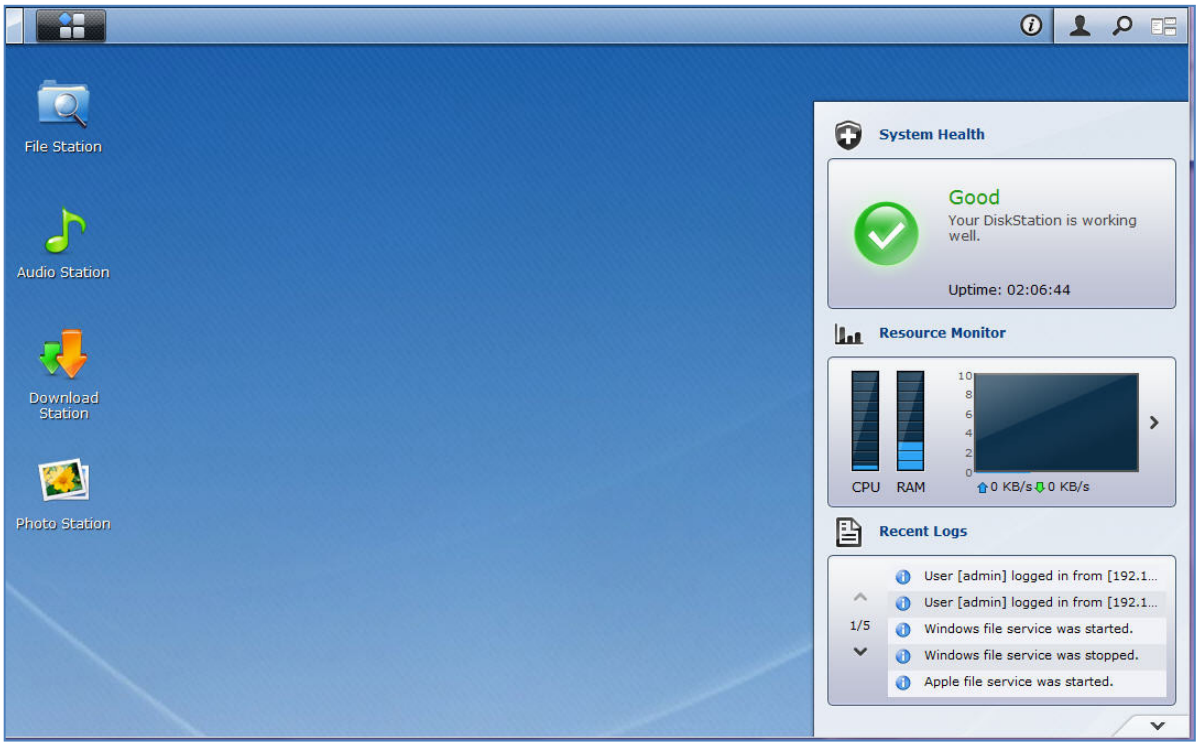
- **Chrome**
- **Firefox**
- **Safari:** 5.0 or later
- **Internet Explorer:** 8.0 or later

DiskStation Manager Appearance

When you log in to Synology DiskStation Manager (DSM), you can see the desktop, taskbar and widgets.

Desktop and Shortcuts

The desktop is where your application windows are displayed. You can also create desktop shortcuts to frequently used applications.



To create a desktop shortcut to an application:

Drag its thumbnail from the **Main Menu** to the desktop.

To remove a desktop shortcut to an application:

Right-click the shortcut and choose **Remove shortcut**.

To open Synology-designed or third-party applications (available at Package Center) in a new browser window:

Right-click the applications' **Main Menu** thumbnail or desktop shortcut and choose **Open in New Window**.

> ***Note:*** You can also customize your desktop background color or wallpaper with the **Desktop** function. See "Desktop" for more information.

Taskbar

The taskbar at the top of the desktop contains the following functions:

1 **The Show Desktop button:** Click to clear your application windows and reveal the desktop. Click again to bring the windows back to the desktop. For more information about application windows, see "Open Application Windows".

2 **The Main Menu button:** Click to reveal the **Main Menu**. See "Manage DSM with the Main Menu" for more information.

3 **The icons of open applications:**

- Click the icon of an application to show or hide its window on the desktop.
- Right-click the icon and choose from the shortcut menu to manage the application window (**Maximize**, **Minimize**, **Restore**, **Close**) or its taskbar icon (**Pin to Taskbar**, **Unpin from Taskbar**).

4 **The Notifications button (with an exclamation mark):** Click to check the logs of important events.

- **Clear All**: Click to remove all events and hide the **Notification** button.
- **Show All**: Click to see all notifications in another window.
- **(Number) unread**: If there are more than 30 unread notifications, **(Number) unread** will appear instead of **Show All** to notify you of how many notifications have not been read. Click to see all notifications in another window.

> ***Note:*** For more information about system log, see "View System Logs".

5 **The Options menu:** Click to manage your user account settings or leave DSM.

- **Options**: Click to manage personal options for your DSM users. See “Manage Personal Options”.
- **Logout**: Click to exit your current account and return to login screen.

6 **The Search icon:** Click to enter keywords in the search field to quickly find a list of relevant applications and **DSM Help** articles.

7 **The Pilot View button:** Click to have an instant preview of all open applications and hover your mouse over the application windows for quick navigation.

> ***Note:*** **Pilot View** is not supported by Internet Explorer.

Widgets

The widgets at the bottom-right corner of the desktop contain the system information of your Synology NAS.

To open/close the widget panel:

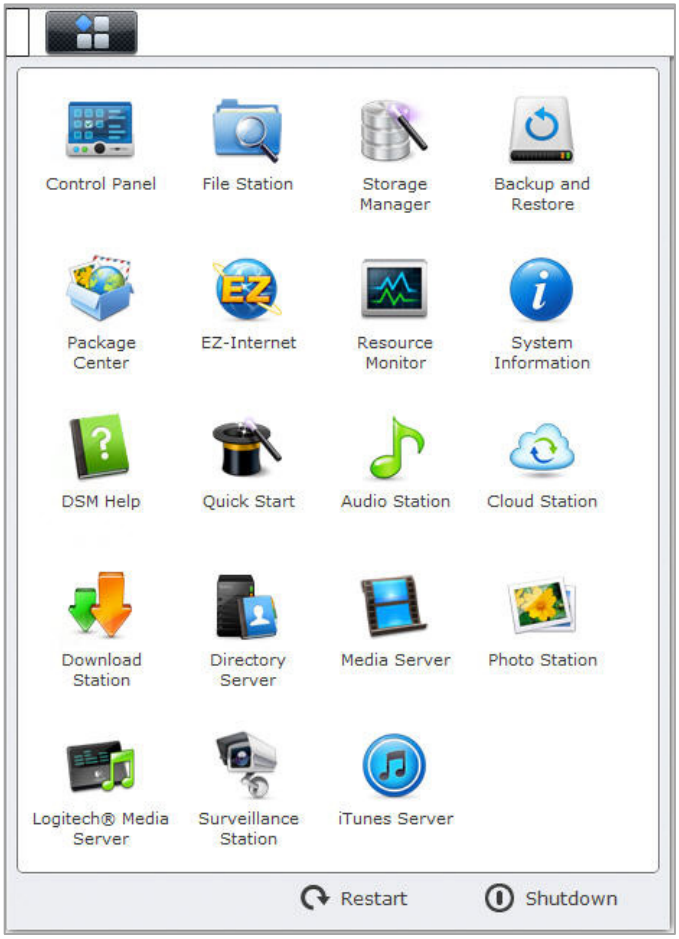
Click the upward/downward triangle to reveal/close the panel.

You can choose any four of the following subject to be displayed on the widget panel. More information can be acquired by clicking the icon at the top-left corner of each corresponding subject panel.

- **Current Connections**: See a list of users who are currently accessing Synology NAS resources.
- **File Change Log**: View the file change log records of Synology NAS services.
  - **No active logs**: Appears when none of the logs (Samba, WebDAV, FTP, File Station) is enabled.
  - **No logs available**: Appears when any one of the logs (Samba, WebDAV, FTP, File Station) is enabled.
- **Recent Logs**: View the log records of Synology NAS services.
- **Resource Monitor**: Monitor the CPU usage, memory usage, and network flow.
- **Scheduled Backup**: View the status of your backup tasks.
- **Storage**: View the volume usage and disk status of your Synology NAS.
- **System Health**: Obtain an overall status of your Synology NAS and all connected devices (if any). You will be advised to take corrective action when system error occurs.

Manage DSM with the Main Menu

The **Main Menu** is where you can find all the applications and settings provided by Synology DiskStation Manager.



Restart and Shutdown

Click **Restart** or **Shutdown** at the bottom-right corner of the **Main Menu** to restart Synology NAS or turn it off, just like using any other operating systems.

Reorder Main Menu's Thumbnails

Open **Main Menu** and drag any thumbnail to any position you want.

Open Application Windows

In addition to the **Control Panel**, the **Main Menu** contains the thumbnails of all the other DSM applications. With DSM's multitasking ability, now you can open multiple application windows at the same time.

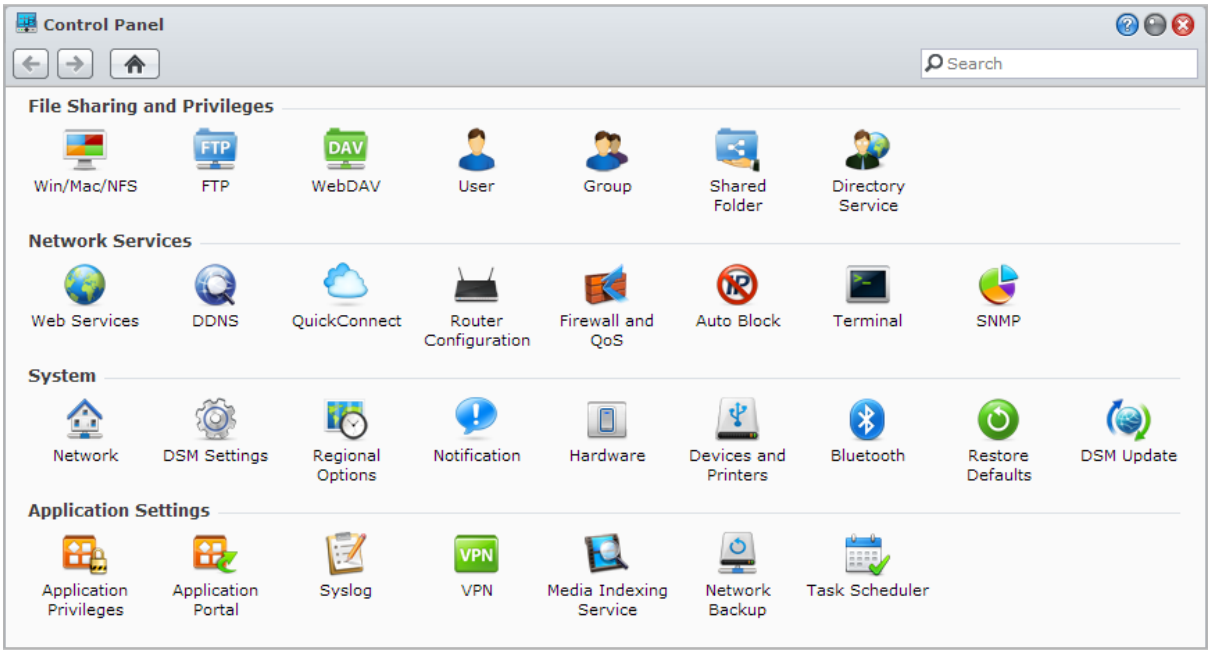
To open an application window:

Click any thumbnail of an application from the **Main Menu** to open the application window on the desktop and the application icon on the taskbar.

> ***Note:*** You can also open application windows through desktop shortcuts. See "Desktop and Shortcuts" for more information.

Use the Control Panel

Choose **Control Panel** from the **Main Menu** to see the thumbnails of DSM settings.



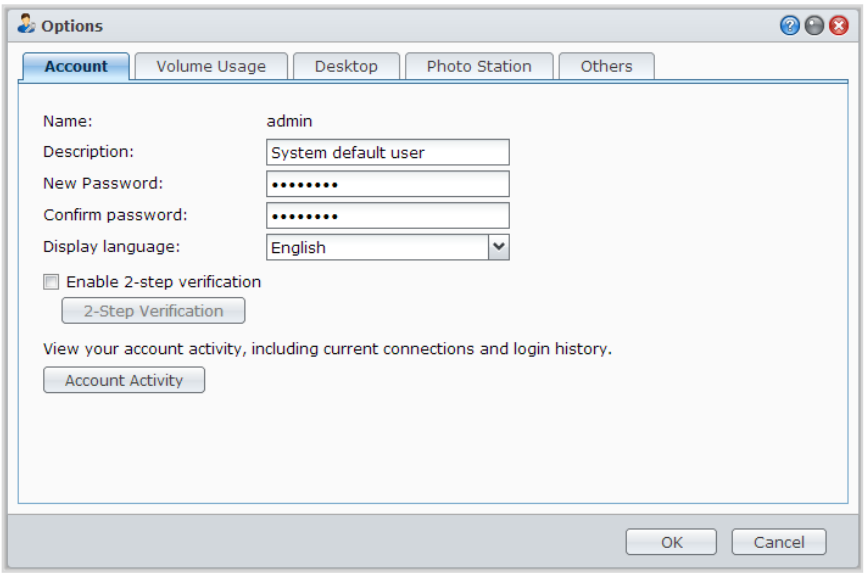
The DSM settings on the Control Panel are grouped into the following categories:

- **File Sharing and Privileges**: Set up file sharing for Win/Mac/NFS, as well as application privileges for different user accounts.
- **Network Services**: Manage and edit the settings for network services and Internet connection.
- **System**: Edit the basic settings on your Synology NAS.
- **Application Settings**: Manage Synology-designed applications.

> ***Note:*** Control Panel is accessible only to users belonging to the **administrators** group. See "Create Groups" for more information.

Manage Personal Options

Click the **Options** menu (with a figure icon) at the top-right corner of your DSM desktop to manage your user account settings or log out of DSM.



Account

Under **Account**, you can edit your account settings, enable 2-step verification, and view recent login activity of your DSM account.

Limitations:

- The user description is case sensitive and can be 0 to 64 displayable Unicode characters.
- The password is case sensitive and should be 0 to 127 displayable characters, including letters, numbers, signs, and space.

2-Step Verification

2-step verification provides improved security for your DSM account. If 2-step verification is enabled, you will need to enter your password in addition to a one-time verification code when logging into DSM. Verification codes are obtained from authenticator apps installed on your mobile device. Therefore, if someone wants to access your account, he will not only need your username and password, but also your mobile device.

Requirements:

2-step verification requires a mobile device and an authenticator app which supports the Time-based One-Time Password (TOTP) protocol. Authenticator apps include Google Authenticator (Android/iPhone/BlackBerry) or Authenticator (Windows Phone).

Account Activity

Account activity displays recent login activity of your DSM account, such as the time your account was accessed or from what IP address.

Volume Usage

Under **Volume Usage**, you can view your quota on all Synology NAS volumes set by DSM **administrators**, as well as the amount of capacity you have used on each volume.

Desktop

Under **Desktop**, you can customize the appearance of your desktop by changing the background and text color of the desktop, or uploading images to be used as the desktop wallpaper.

Photo Station

This tab is viewable only when users belonging to the **administrators** group enable Personal Photo Station service in Photo Station. Synology NAS provides the **home/photo** folder for you to store photos and videos that you want to share. The system will create index thumbnails of the photos and videos automatically, and then people can view photo albums via a web browser. See "Enable Personal Photo Station" for more information.

Others

Under **Others**, you can customize other personal options. For more information about personal options, please see **DSM Help**

Chapter

3

Modify System Settings

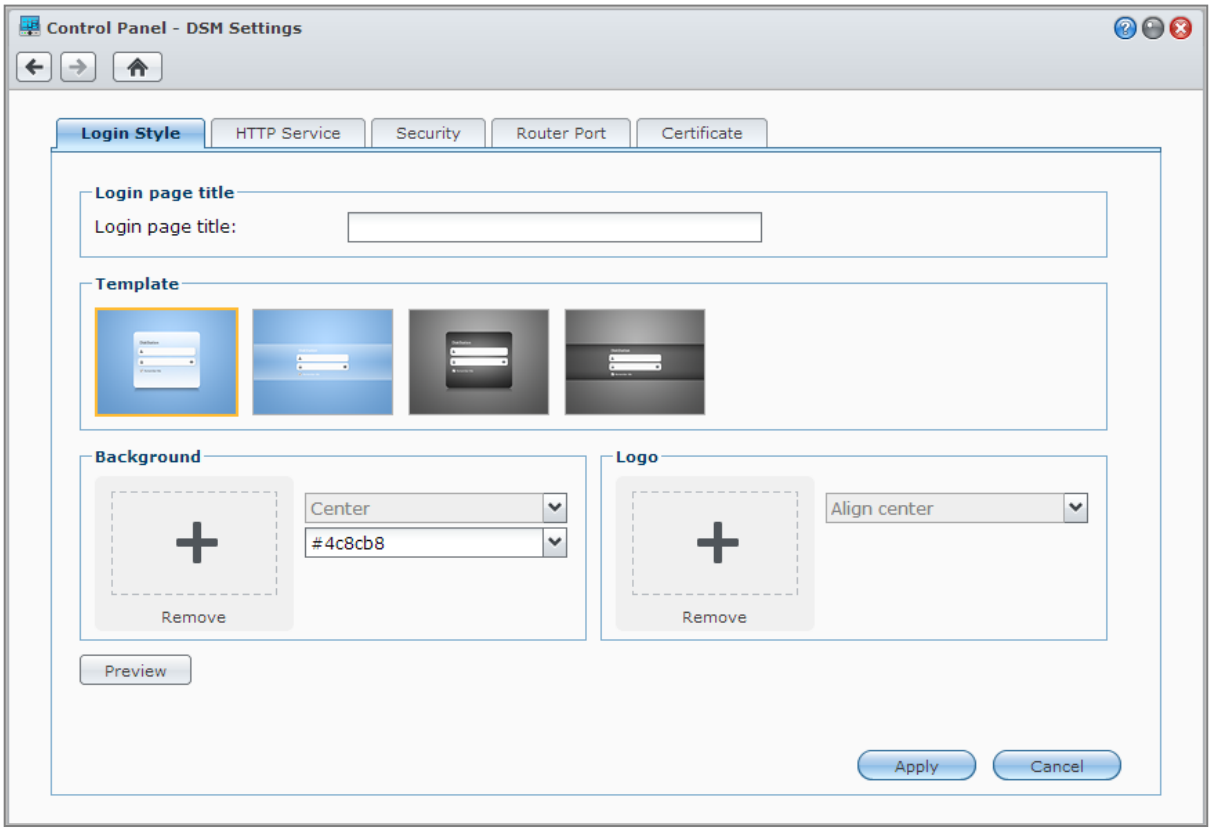
After you have connected to Synology DiskStation Manager (DSM) and learned how to access its functions and customize its appearance, users belonging to the **administrators** group can begin to modify basic settings.

This chapter explains the basics of modifying network settings, display languages, time, and energy saving features. For more detailed instructions, please see **DSM Help**.

Change DSM Settings

DSM provides options to change the style of the login screen, customize the ports used for HTTP service, enhance the security of browsing sessions, configure ports for sharing files with Internet services, and validate the identity of a server and the administrator with a certificate.

Go to **Main Menu** > **Control Panel** > **DSM Settings** to change the following DSM settings. For more detailed instructions, please see **DSM Help**.



Login Style

The **Login Style** tab provides options to change the layout of the DSM login screen, allowing you to choose from a variety of templates or upload custom logos or background images.

HTTP Service

Click the **HTTP Service** tab to change the port number for accessing DSM or configure HTTPS settings. When the HTTPS connection function is enabled, any connection to Synology NAS via the HTTPS protocol will be encrypted with the SSL/TLS encrypting mechanism.

More Information

About redirecting to HTTPS connection:

When the option **Automatically redirect HTTP connections to HTTPS** is checked, you will be redirected to port 5001 while trying to access the web DSM through port 5000.

Ports used for HTTPS connection:

- **DSM:** The port number is 5001, so you can access the DSM through the secure channel: https://Synology_Server_IP:5001/
- **Web Station:** The port number is 443, so you can access Web Station through the secure channel: https://Synology_Server_IP:443/ or https://Synology_Server_Name:443/

Security

Click the **Security** tab to modify the security settings for each DSM login session. The following options are available here:

- **Logout timer:** An automatic logout occurs if you are inactive for the time period you specified in the logout timer.
- **Enhance browser compatibility by skipping IP checking:** If you access Synology NAS through a HTTP proxy and encounter random logouts, you can skip IP checking. However, skipping IP checking will lower the security level.
- **Improve protection against scripting attacks:** This option enhances the system's protection against cross-site scripting attacks.
- **Do not allow DSM to be embedded with iFrame:** You can restrict other websites from embedding DSM into other web pages with iFrame, thus preventing certain types of attacks from malicious websites.

Router Port

Click the **Router Port** tab to configure router port settings. To open files on the Synology NAS with Internet services (such as Google Docs or Pixlr Editor), please enter the hostname or public static IP address of the Synology NAS, as well as the public port number. These settings only need to be modified if different port numbers were specified for the router port (assigned on your router) and the local port (assigned on your Synology NAS) during setup.

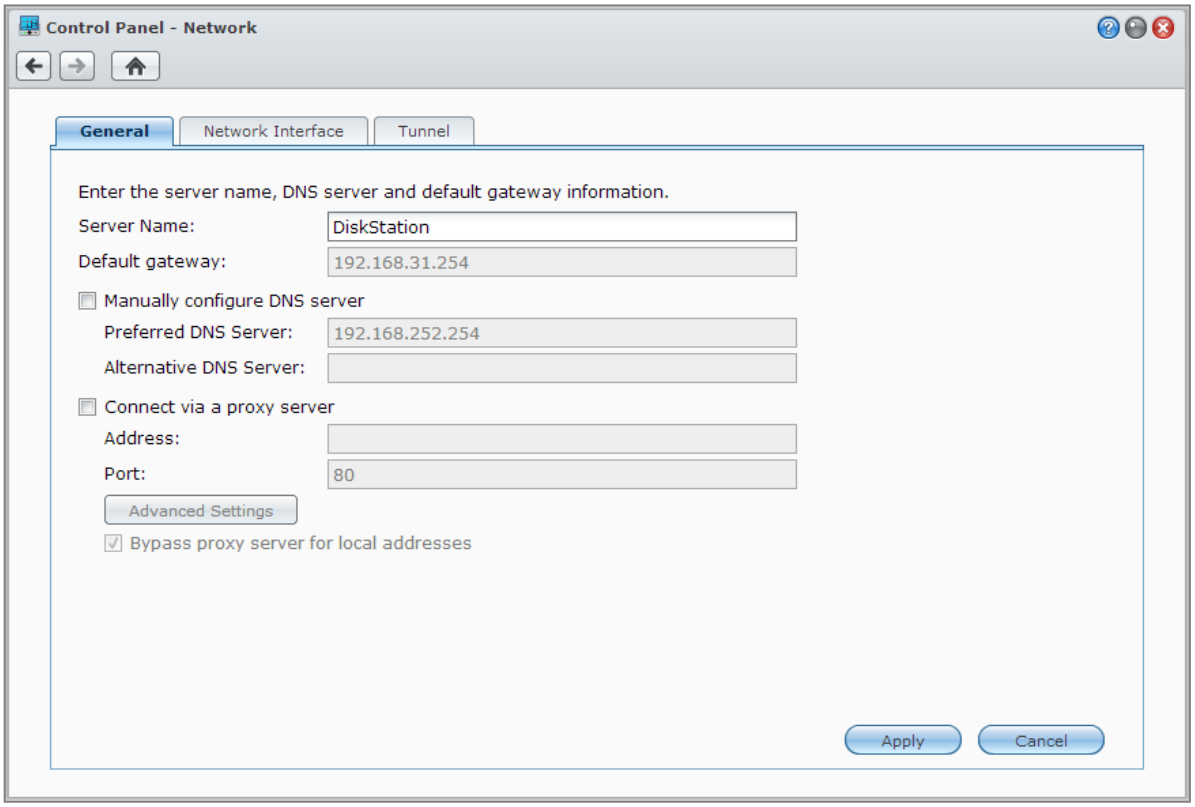
Certificate

A certificate can be used for SSL secured services of the Synology NAS, such as web, mail, or FTP. Having a certificate allows users to validate the identity of a server and the administrator before sending any confidential information. Click the **Certificate** tab to manage and view the status of Synology NAS certificates, allowing you to create, import/export, or renew certificates. The certificate setup wizard helps create self-signed certificates or download certificate signing requests (CSR) for registration with certificate authorities (CA).

For more information regarding managing certificates, please see **DSM Help**.

Change Network Settings

Go to **Main Menu** > **Control Panel** > **Network** to modify the following network settings of your Synology NAS. For more detailed instructions, please see **DSM Help**.



General

The **General** tab provides options to edit the name and default gateway of the Synology NAS, as well as configure domain name server or proxy server settings.

Network Interface

The **Network Interface** tab provides options to connect your Synology NAS to the network via the following network interfaces.

LAN

If your Synology NAS is connected to a local area network, you can click **LAN** or **LAN [number]** (for Synology NAS with multiple LAN ports) on the left side to configure network interface settings, such as choosing whether to automatically obtain network configurations with DHCP or to manually set the IP address of the Synology NAS.

Bond

For Synology NAS with multiple LAN ports, you can combine multiple LAN interfaces into the **Bond [number]** interface with Link Aggregation[1]. You can configure this interface as you would with any LAN interface.

Term Explanation
Link Aggregation: For Synology NAS with multiple LAN ports, you can set your Synology NAS to connect multiple LAN cables to the network at the same time, or assign it with two IP addresses under different subnets. With Link Aggregation enabled, trunking (combining network bandwidth of aggregated LAN interfaces for multiplied connection speed) and network fault tolerances (maintaining network connection when any of the aggregated LAN interfaces is unavailable) are supported.

[1] Link Aggregation is only supported on Synology NAS with multiple LAN ports.

Wireless[1]

Click **Wireless** on the left side to connect the Synology NAS to a wireless network. Wireless network is available only when a wireless dongle is plugged into the USB port of your Synology NAS.

IPv6 Setup

When you are configuring the **LAN** or **Wireless Network** interface, click the **IPv6 Setup** button to change the IPv6 settings.

Synology NAS supports IPv4/IPv6 dual stack scheme. This means that both IPv4 and IPv6 can work simultaneously on Synology NAS. The default setting for IPv6 is **Auto**.[2]

PPPoE

Click the **PPPoE** on the left side if your Synology NAS is connecting to a DSL or cable modem, and your Internet Service Provider (ISP) uses PPPoE (Point to Point Protocol over Ethernet).

Hotspot[3]

For certain models, or if a wireless dongle[4] is connected to the USB port of your Synology NAS, you can enable hotspot on your Synology NAS to turn it into a wireless access point that can share its wireless connection with computers or mobile devices within the range of the Wi-Fi network.

Tunnel

Tunnel is a technique that encapsulates IPv6 packets within IPv4 packets, allowing isolated IPv6 host or network to be compatible with IPv4 network backbone.

Click the **Tunnel** tab to allow your Synology NAS to gain Internet access via IPv6 under the IPv4 environment.

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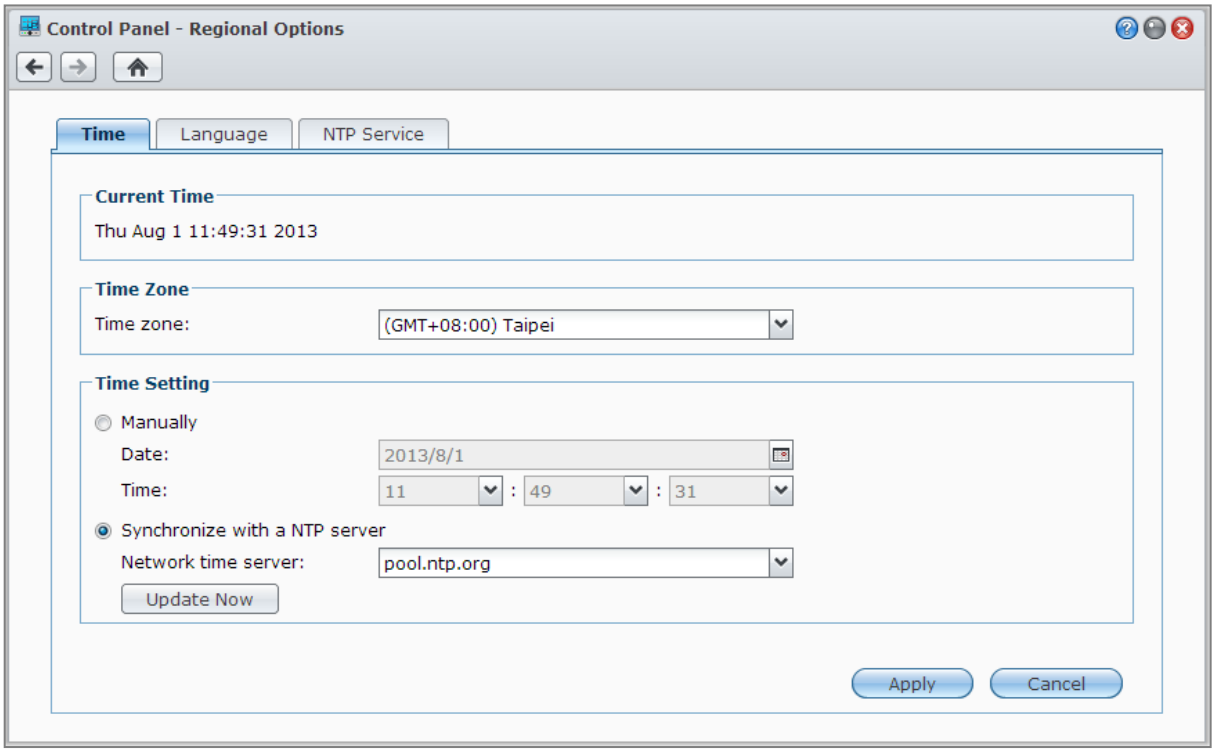
[1] Wireless network is supported on specific models only.
[2] IPv6 service is only supported on 08-series models or later (excluding 108j, 109j).
[3] Hotspot is supported on specific models only.
[4] For a complete list of supported wireless dongles, visit **www.synology.com**.

Modify Regional Options

Go to **Main Menu** > **Control Panel** > **Regional Options** to configure the following regional options. For more detailed instructions, please see **DSM Help**.



Set Up Time

Click the **Time** tab to set up the system time settings of the Synology NAS. You can check the current time, manually set the server's date and time, or automatically set the time using a network time server.

Language

Click the **Language** tab to set the language for Synology DiskStation Manager, notifications, and specify the codepage for Unicode filename conversion.

- **Display Language**: Choose your preferred display language, or have it the same as your default browser setting.
- **Notification Language**: Set your preferred language for email and instant messaging notifications from Synology NAS.
- **Codepage**: Synology NAS uses Unicode to avoid file inaccessibility from computers using different languages. But for the following devices or applications to use Synology NAS services without problem, you need to choose the appropriate codepage for them:
  - Computers without Unicode support
  - Applications that convert non-Unicode strings to Unicode, such as FTP service, UPnP support, music metadata indexing

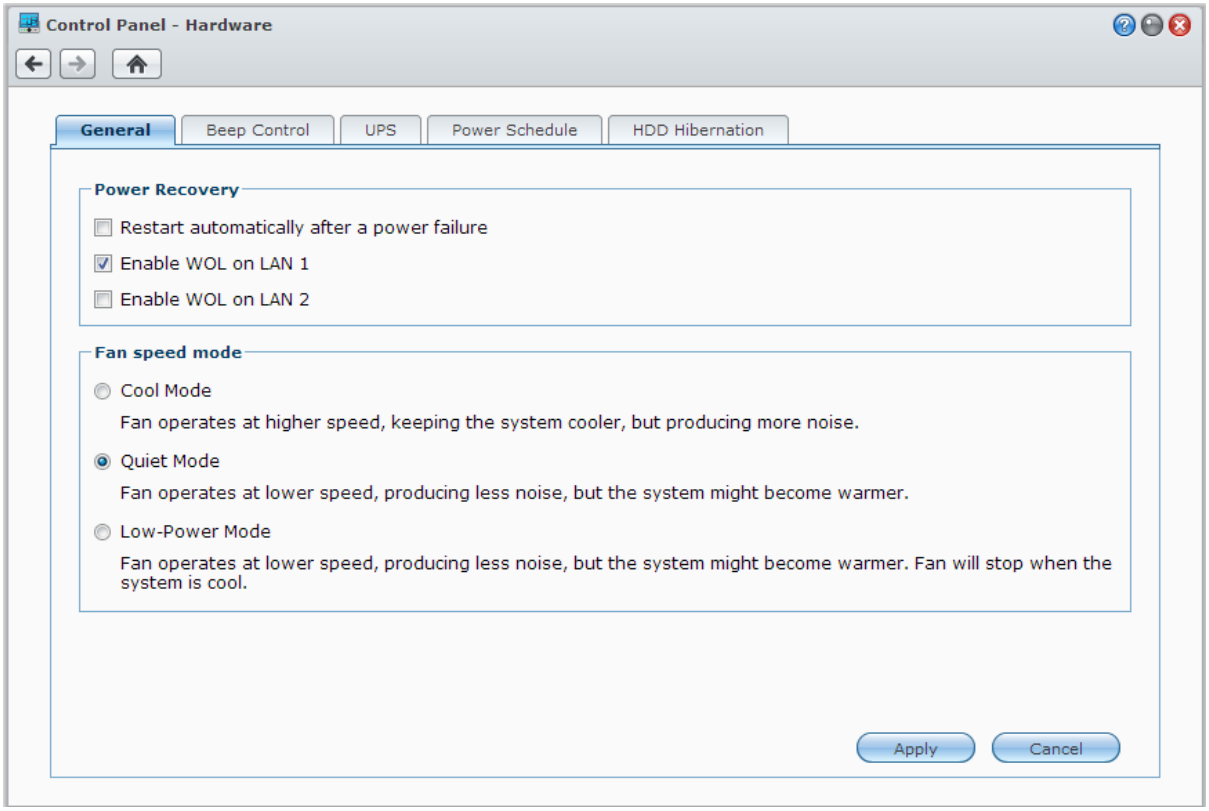
NTP Service

Click the **NTP Service** tab to have your Synology NAS serve as a network time server to synchronize time between different network devices and the Synology NAS over network.

> ***Note:*** The NTP service is required for Surveillance Station and Synology High Availability. Therefore, if you have Surveillance Station installed and run on your Synology NAS, the service cannot be disabled while the package is running.

Use Energy Saving Features

Go to **Main Menu** > **Control Panel** > **Hardware** to manage the following energy saving features provided by DSM. For more detailed instructions, please see **DSM Help**.


Control Panel - Hardware
General
Beep Control
UPS
Power Schedule
HDD Hibernation
Power Recovery
Restart automatically after a power failure
Enable WOL on LAN 1
Enable WOL on LAN 2
Fan speed mode
Cool Mode
Fan operates at higher speed, keeping the system cooler, but producing more noise.
Quiet Mode
Fan operates at lower speed, producing less noise, but the system might become warmer.
Low-Power Mode
Fan operates at lower speed, producing less noise, but the system might become warmer. Fan will stop when the system is cool.
Apply
Cancel

General

Click the **General** tab to modify power recovery, Wake on LAN (WOL)[1], or fan speed settings.

- **Restart automatically after a power failure:** If the system shuts down due to unexpected power failure, the power recovery function allows the system to boot up automatically once power has been restored.
- **Enable Wake on LAN:** Enable Wake on LAN for the specified network interface.
- **Fan Speed Mode:** Modify the fan speed according to your environment and preferences.

More Information

About Wake on LAN: After Wake on LAN is enabled for your Synology NAS, you can turn on Synology NAS over the local area network or the Internet by using a WOL (Wake on LAN) application. Activate the function by entering the IP address (or DDNS hostname) and MAC address of Synology NAS.

Wake on LAN works only after Synology NAS is shut down properly by pressing the **Power** button or selecting **Shutdown** from DSM's Main Menu, and its power cord is plugged into a working power outlet.

Note: You can also perform Wake on LAN for supported Synology NAS with Synology Assistant (available at Synology's **Download Center**). See the Help of Synology Assistant for more information.

Beep Control

Click the **Beep Control** tab to have Synology NAS play beep sounds under certain circumstances.

[1] Wake on LAN is supported on specific models only. Visit **www.synology.com** for more information.

UPS

Under the **UPS** tab, you can modify UPS-related settings. UPS (Uninterruptible Power Supply) is a backup power device that allows the Synology NAS to continue operating for a short time if power failure occurs. This function helps prevent data loss by giving the Synology NAS enough time to save data and unmount volumes before losing power and shutting off. Synology NAS supports connecting to local or SNMP UPS devices.

Power Schedule

Click the **Power Schedule** tab to start up or shut down automatically at a specified time.

HDD Hibernation

Click the **HDD Hibernation** tab to manage disk hibernation for all internal or external disks on your Synology NAS.

When a disk enters HDD hibernation mode, it will stop spinning and become inactive, which not only saves energy but also extends the disk's lifespan.

Chapter

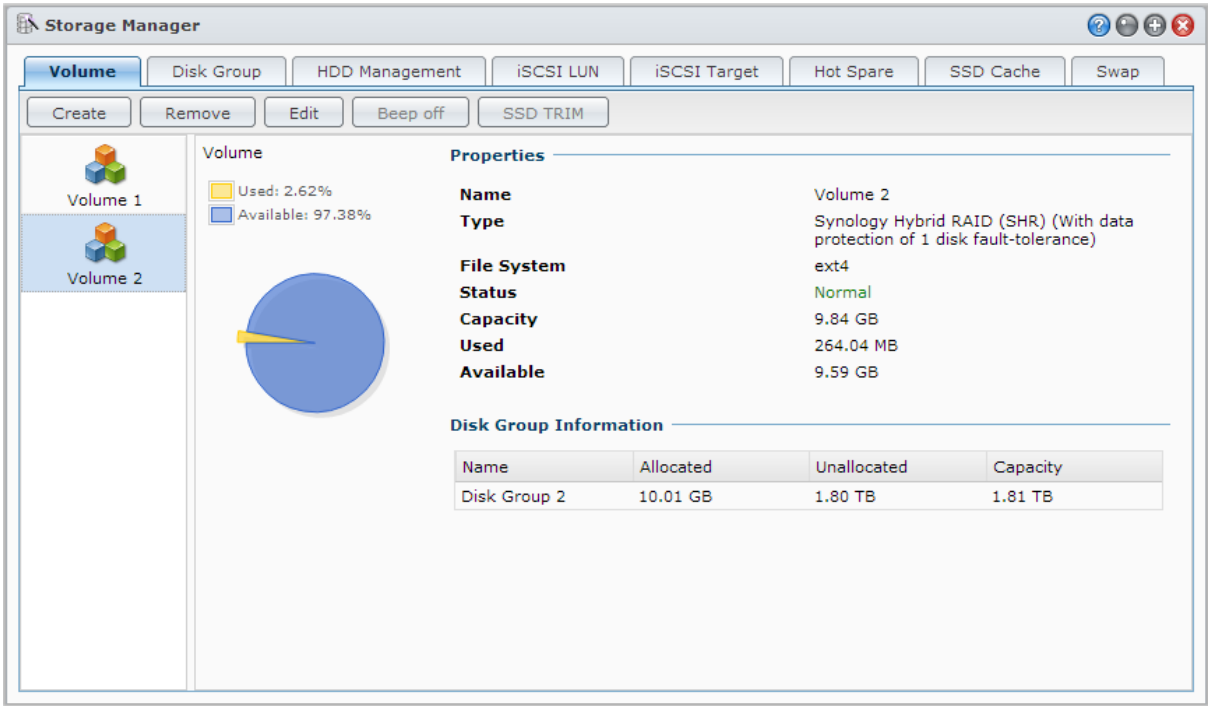
4

Manage Storage Space

Before taking advantage of the various features of your Synology NAS, you need to set up at least one storage space. This chapter explains how Storage Manager can help you manage storage spaces, such as volumes, Disk Groups, iSCSI Targets, or iSCSI LUNs, as well as view the status of hard drives. For more detailed instructions, please see **DSM Help**.

Volumes and Disk Groups

Volumes are the basic storage spaces on your Synology NAS. Before you start storing or serving any data, you will need to create at least one volume. With DSM's Storage Manager, volumes can be created with various options, such as different RAID types or customized capacity allocation. For detailed instructions, please see **DSM Help**.



Create Volumes

To create a volume, go to **Main Menu** > **Storage Manager** > **Volume** and click **Create**. This action launches a setup wizard which helps create a volume based on your individual needs.

Quick or Custom Volumes

When creating a new volume, the following options are available:

Method	Features
Quick	Creates an SHR (Synology Hybrid RAID) volume. Automatically optimizes volume capacity and performance based on member hard disks. Recommended for saving time and simplifying storage management.
Custom	Supports different RAID types. Supports creating single or multiple volumes on Disk Groups. Provides options to allocate specific amounts of capacity for each volume (only when creating multiple volumes on RAID) Recommended for users who want to precisely control storage management on your Synology NAS.

Single or Multiple Volumes on RAID

When creating a custom volume, the following options are available:

Option	Feature
Single Volume on RAID	Uses all of the available capacity of the selected disks to create a single volume. Provides better speed and performance. Supports different RAID types.
Multiple Volumes on RAID	Allows you to create multiple volumes on a Disk Group. Supports allocating specific amounts of capacity to each volume. Provides greater storage management flexibility. Supports different RAID types.

RAID Types

Depending on your model and number of installed hard disks, the below RAID types can be implemented when creating custom volumes or Disk Groups.

RAID Type	HDD #	Allowed Failed HDD #	Description	Capacity
SHR[1]	1	0	A **Synology Hybrid RAID** volume optimizes storage capacity and performance when combining hard drives of different sizes. SHR volumes consisting of two or three hard disks provide 1-disk fault tolerance, while SHR volumes consisting of four or more hard disks can provide 1- or 2-disk fault tolerance.	1 x (HDD size)
	2 - 3	1		Optimized by the system
	≧ 4	1 - 2		
Basic	1	0	A **Basic** volume is created with one hard drive as an independent unit. When creating a Basic volume, you can select only one hard drive at a time.	1 x (HDD size)
JBOD	≧2	0	**JBOD** is a collection of hard drives.	Sum of all HDD sizes
RAID 0	≧2	0	Combining multiple disks to build a storage space, **RAID 0** offers **Striping**, a process of dividing data into blocks and spreading the data blocks across several hard drives, but without safety measures.	(HDD #) x (Smallest HDD size)

[1] RAID types except for Basic are supported on specific models only. Visit **www.synology.com** for more information.

RAID Type	HDD #	Allowed Failed HDD #	Description	Capacity
RAID 1	2 - 4	(HDD #) - 1	The system will write identical data to each hard drive at the same time, so data integrity is protected when at least one disk is normal.	Smallest HDD size
RAID 5	≧3	1	This configuration includes a backup option. It uses parity mode to store redundant data on space equal to the size of one disk for later data recovery.	(HDD # – 1) x (Smallest HDD size)
RAID 5+Spare	≧4	2	A **RAID 5+Spare** storage space requires at least four drives, one of which will act as a **hot spare drive** to rebuild the failed drive of the volume automatically.	(HDD # – 2) x (Smallest HDD size)
RAID 6	≧4	2	**RAID 6** provides extra data protection. It uses parity mode to store redundant data on space equal to the size of two disks for later data recovery.	(HDD # – 2) x (Smallest HDD size)
RAID 10	≧4 (even number)	1 HDD within each RAID 1 group	**RAID 10** has the performance of **RAID 0** and data protection level of **RAID 1**. **RAID 10** combines two hard drives into a RAID 1 group, and combines all the groups with RAID 0.	(HDD # / 2) x (Smallest HDD size)

Create Disk Groups

As stated above, creating Disk Groups provides more flexibility when managing storage spaces. Disk Groups can be created within the volume creation setup wizard, or you can go to **Main Menu** > **Storage Manager** > **Disk Group** and click **Create**.

Repair Volumes or Disk Groups

The repair function is available for RAID 1, RAID 10, RAID 5, RAID 5+Spare, RAID 6, and SHR volumes or Disk Groups. Depending on your RAID types, when one of the hard drives in the volume or Disk Group fails, it will be in the **degraded** mode. You can repair the volume or Disk Group by replacing the crashed disk(s) to keep the data on the volume or Disk Group protected. For more detailed instructions, please see **DSM Help**.

Change RAID Type

The RAID types of existing volumes and Disk Groups can be changed without losing existing data, allowing you to easily and economically manage storage capacity. For example, you can create a RAID 1 volume on your Synology NAS, and later change to RAID 5 if you install more hard disks.

The sections below provide basic information regarding changing RAID types. For more detailed instructions, please see **DSM Help**.

Supported RAID Types

RAID types can be changed as follows.

RAID Type	Can be changed to...
Basic	RAID 1, RAID 5, RAID 5+Spare
RAID 1	RAID 5, RAID 5+Spare
RAID 5	RAID 5+Spare, RAID 6
Add mirror disk to RAID 1	RAID 1

Hard Disk Requirements

In order to change the RAID type of a volume or Disk Group, there must be a sufficient number of available hard disks installed in your Synology NAS. Please see below for the minimum number of hard disks required for each RAID type.

RAID Type	Minimum Hard Disks
RAID 1	2 or 4
RAID 5	3
RAID 5+Spare	4
RAID 6	4

Expand Volumes or Disk Groups

The storage capacity of volumes or Disk Groups can be gradually expanded by installing more or larger hard disks. This feature allows you to expand the capacity of your volume or Disk Group according to your budget and with no need to worry about losing any existing data.

The sections below provide basic information regarding expanding volumes and Disk Groups. For more detailed instructions, please see **DSM Help**.

Expand a Volume by Changing Volume Size

When creating multiple volumes on RAID, specified amounts of Disk Group storage capacity can be allocated to each volume. If you want to change the amount of allocated storage capacity for a volume, please select the volume and click **Edit**.

Expand a Volume or Disk Group by Replacing Hard Disks

For SHR, RAID 1, RAID 5, RAID 5+Spare, or RAID 6, the storage capacity of volumes and Disk Groups can be expanded by replacing smaller hard disks with larger ones. When expanding storage capacity with this method, please be careful to replace each hard disk one-by-one. After replacing one hard disk, the volume or Disk Group must be repaired before the next hard disk is replaced. For more detailed instructions, please see **DSM Help**.

Please see the following table to see which hard disk should be replaced first.

RAID Type	Minimum Hard Disk Size
RAID 5 and RAID 6	When replacing hard disks of RAID 5 or RAID 6 volumes or Disk Groups, the smallest hard disk should always be replaced first. The storage capacity of RAID 5 volumes is (number of hard disks – 1) x (smallest hard disk size), and RAID 6 is (number of hard disks – 2) x (smallest hard disk size). Therefore, the smallest hard disk should always be replaced first in order to maximize hard disk usage.
SHR (Synology Hybrid RAID)	If the capacity of all member hard disks is equal, then you should replace at least two hard disks. Otherwise, the capacity of your volume will not expand.
	If the capacity of member hard disks is different, then the new, replacement hard disks should be equal to or larger than the largest existing hard disk. In addition, you should replace smaller member hard disks first in order to optimize capacity usage.

Expand a Volume or Disk Group by Adding Disks

For SHR, JBOD, RAID 5, RAID 5+Spare, and RAID 6, the storage capacity of volumes and Disk Groups can be expanded by adding more hard disks if there are empty hard drive bays in your Synology NAS. For more detailed instructions, please see **DSM Help**.

Please see the following table regarding the minimum size of new hard disks.

RAID Type	Minimum Hard Disk Size
SHR	The capacity of the hard disk you wish to add must be equal to or larger than the largest hard disk in the volume or Disk Group. For example, if your volume is composed of three hard disks – 2 TB, 1.5 TB, and 1 TB respectively – then the capacity of the new hard disk must be at least 2 TB.
RAID 5, RAID 5+Spare, or RAID 6	The capacity of the hard disk you wish to add must be equal to or larger than the smallest hard disk in the volume or Disk Group. For example, if your volume is composed of three hard disks – 2 TB, 1.5 TB, and 1 TB respectively – then the capacity of the new hard disk must be at least 1 TB.

Data Scrubbing

Data scrubbing is a data maintenance function that inspects volumes or Disk Groups and repairs any detected data inconsistencies. This function can be used with volumes or Disk Groups that implement SHR (comprised of three or more disks), RAID 5, or RAID 6.

We recommend regularly performing data scrubbing in order to maintain data consistency and avoid losing any critical data in the event of disk failure. For detailed instructions, please see **DSM Help**.

SSD TRIM

If a volume consists entirely of SSDs (Solid State Drives), we recommend enabling SSD TRIM. This feature optimizes the read and write performance of volumes created on SSDs, increasing efficiency as well as extending the lifetime of your SSDs.

Before trying to set up SSD TRIM, please see **DSM Help** for detailed instructions and more limitations.

Note:

- SSD TRIM is only available on certain Synology NAS models and RAID types.
- Some SSD models are not able to perform SSD TRIM on RAID 5 and RAID 6 volumes. Please refer to the compatibility list at **www.synology.com**.

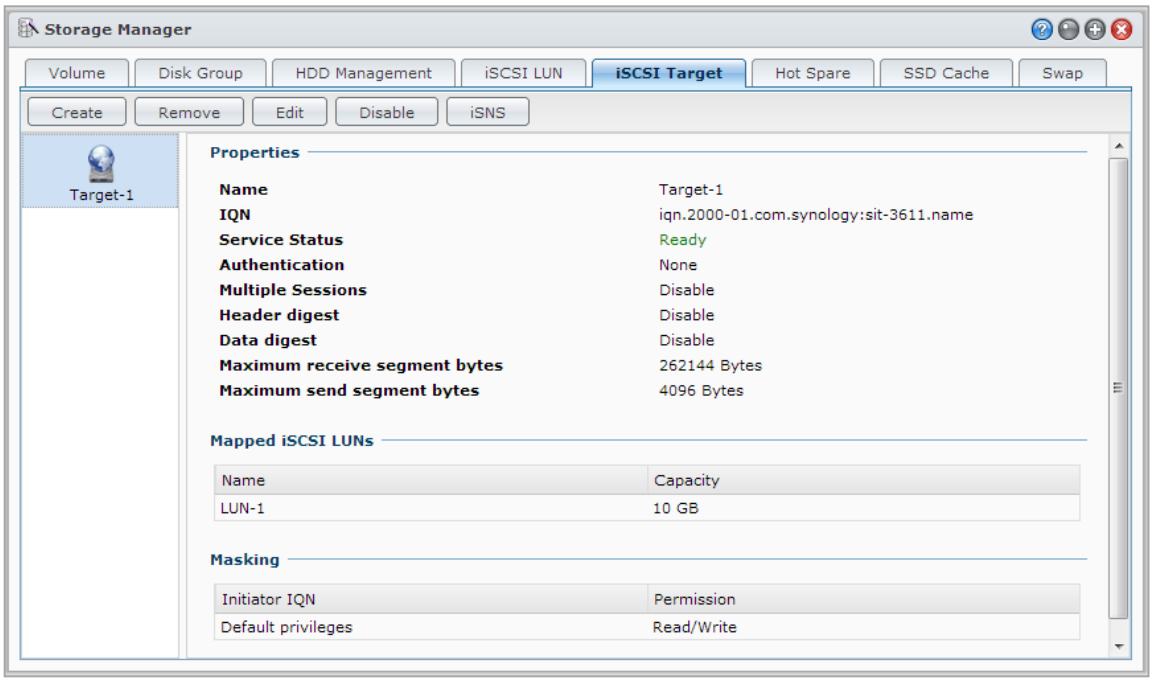
iSCSI Targets and LUNs

iSCSI (Internet Small Computer System Interface) is a type of storage area networking (SAN) service that provides access to consolidated, block level data storage. The main use of iSCSI is to facilitate data transfers over intranets, allowing users to manage storage over long distances.

The sections below provide basic information regarding iSCSI Targets and LUNs. For more detailed instructions, please see **DSM Help**.

Manage iSCSI Targets

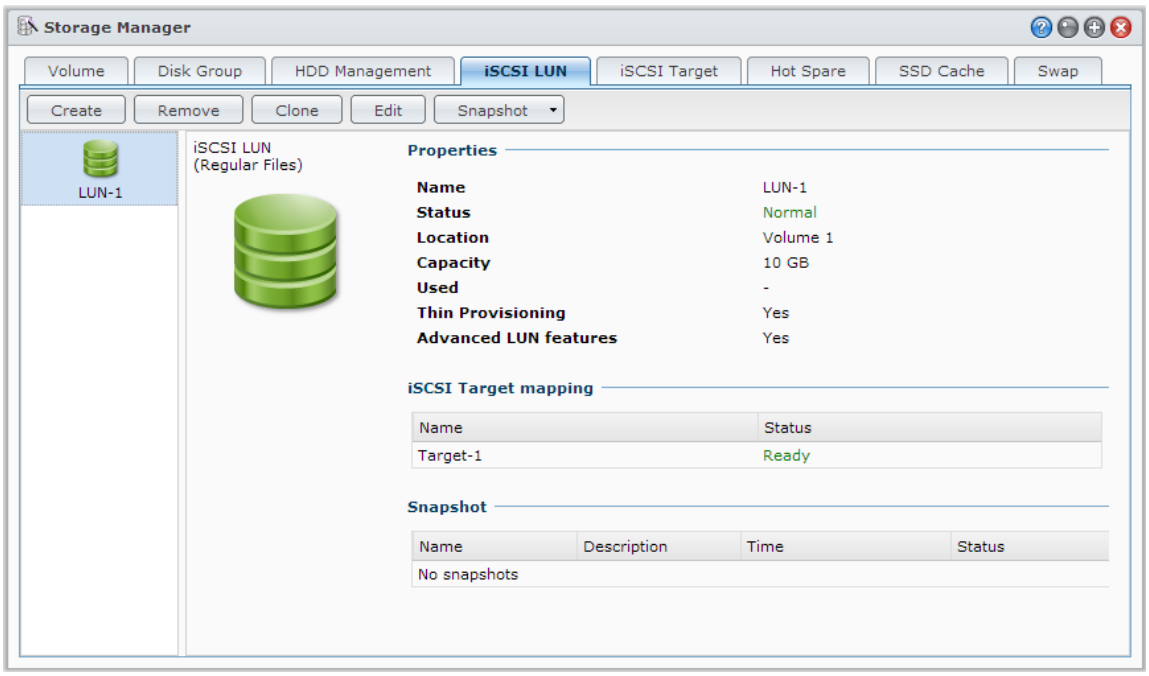
Go to **Main Menu** > **Storage Manager** and click the **iSCSI Target** tab to manage iSCSI Targets on your Synology NAS. The maximum number of iSCSI Targets varies depending on the model. For more information, please refer to “Manage iSCSI LUNs”.



Manage iSCSI LUNs

An iSCSI LUN (logical unit number) represents an individually addressable portion of an iSCSI Target. An iSCSI LUN can be mapped to multiple iSCSI Targets to perform storage operations such as read or write.

Go to **Main Menu** > **Storage Manager** and click the **iSCSI LUN** tab to manage iSCSI LUNs on your Synology NAS. The maximum number of iSCSI LUNS varies depending on the model. For detailed product specifications, please refer to www.synology.com.



Clone iSCSI LUNs

LUN Clone[1] allows you to create near-instantaneous virtual copies of a LUN. It means much higher productivity and less complex deployment during system-wide operations. LUN Clone also consumes only a fraction of storage at the time of creation.

Go to **Main Menu** > **Storage Manager** and click the **Clone** button to make a writable copy of an iSCSI LUN or an iSCSI LUN snapshot

Take iSCSI LUN Snapshots

LUN Snapshot[1] allows you to create up to 256 snapshots per LUN using point-in-time technology without having any impact to system performance. It is efficient for your valuable storage space and also increases the level of protection, letting you easily recover valuable data.

Go to **Main Menu** > **Storage Manager** and click the **Snapshot** button to take iSCSI LUN snapshots.

Manage Hard Disks

The **HDD Management** tab allows you to monitor the status of the hard disks installed in your Synology NAS, providing options to manage and analyze hard disk performance and health. To see this tab, go to **Main Menu** > **Storage Manager** and click **HDD Management**. For more detailed instructions, please see **DSM Help**.

Enabling Write Cache Support

Enabling write cache support enhances the performance of your Synology NAS. Only certain hard disk models support this feature. To ensure data protection while using write cache support, usage of a UPS device is strongly recommended. We also suggest the system be shut down properly every time after use. Disabling write cache will reduce the chances of data loss caused by abnormal power outages, but system performance will decline.

Running S.M.A.R.T. Tests

Disk S.M.A.R.T. tests examine and report the status of your hard disk, alerting you to possible disk failures. We recommended promptly changing your disk if any errors are detected. S.M.A.R.T. tests can also be scheduled to run automatically by creating tasks.

Checking Disk Info

The **Disk Info** section displays a hard disk's model name, serial number, firmware version, and total size.

SSD Cache

SSD cache[2] drives can be installed and mounted in a RAID 0 configuration to boost the read speed of a volume, including iSCSI LUN (Regular Files) on a volume, or iSCSI LUN (Block-Level) on your Synology server. You can mount, check SSD compatibility, and view related information by going to **Main Menu** > **Storage Manager** > **SSD Cache**.

Please refer to your Synology server *Quick Installation Guide* for information regarding SSD installation. For more detailed information regarding SSD management, please see **DSM Help** or **Synology SSD Cache White Paper**.

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[1] LUN Clone and Snapshot are only available on specific models.

[2] SSD cache is supported on specific models only. Visit **www.synology.com** for more information

Hot Spare

Hot spare[1] disks are standby hard disks that can repair a degraded volume/Disk Group/iSCSI LUN by automatically replacing a failed disk. Hot spare disks can be globally assigned to protect any volume/Disk Group/iSCSI LUN within your Synology NAS, as long as the volume/Disk Group/iSCSI LUN matches the following criteria:

- The RAID type of the volume/Disk Group/iSCSI LUN must be one with data protection (i.e. RAID 1, RAID 5, RAID 6, RAID 10).
- The hot spare disk size must be equal to or larger than the size of the smallest disk in the volume/Disk Group/iSCSI LUN.

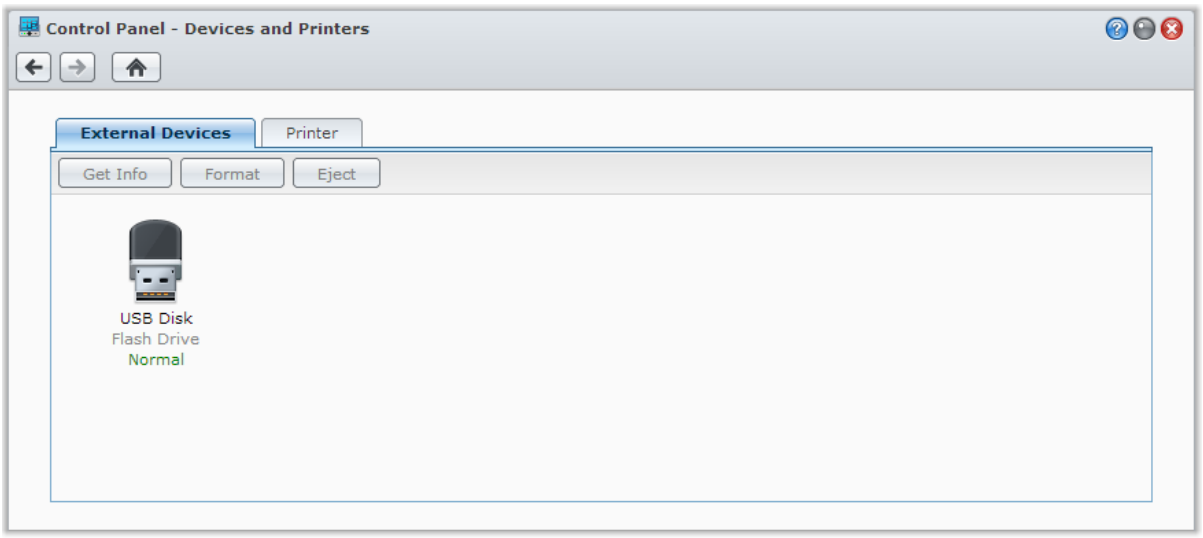
Managing Hot Spares

Go to **Storage Manager** > **Hot Spare** > **Manage** to assign and manage hot spare disks. For more detailed information, please see **DSM Help**.

Manage External Disks

External USB or eSATA disks can be attached to the USB or eSATA port of your Synology NAS for backup or file sharing purposes.[2]

Go to **Main Menu** > **Control Panel** > **Devices and Printers** > **External Devices** to manage attached external disks or setup printers. The **External Devices** tab provides options to view device information, change formats, or eject the device. The **Printer** tab provides options to setup USB or network printers. For more detailed instructions, please see **DSM Help**.



[1] The hot spare feature is available on specific models only.
[2] eSATA is supported on specific models only. Visit www.synology.com for more information.

Chapter 5

Manage Storage Space (for RS10613xs+)

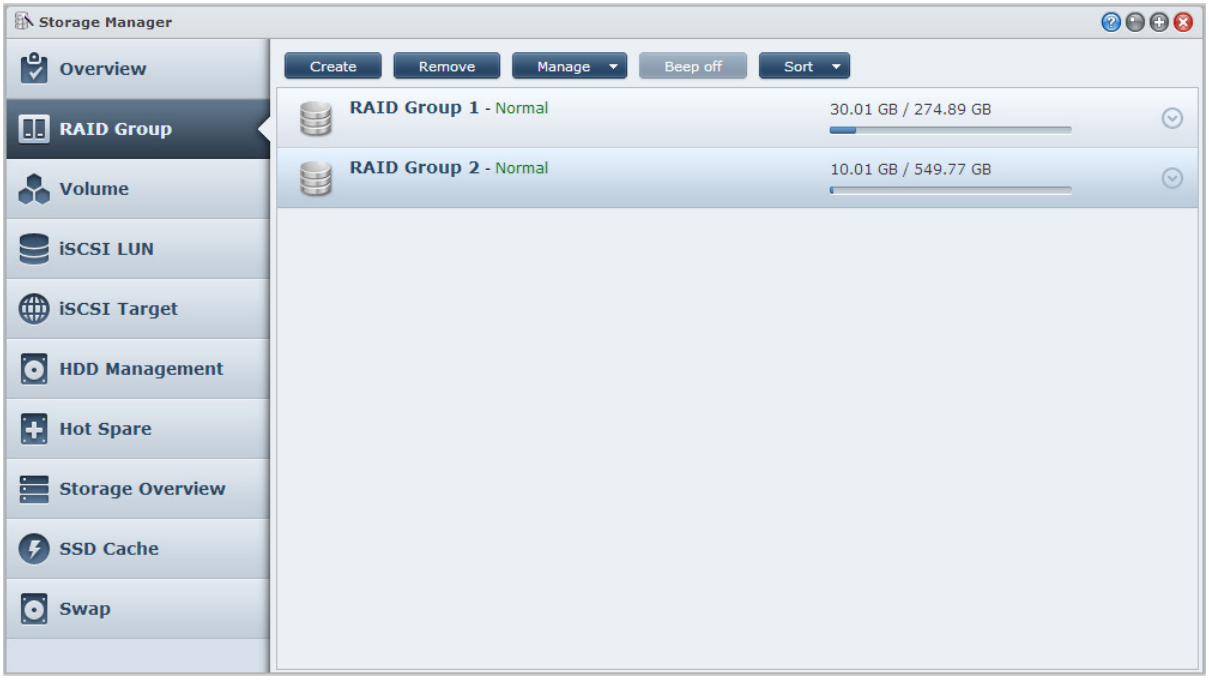
Before using features or services on your Synology NAS, you need to create RAID Groups and manage storage spaces. This chapter explains how to create and manage RAID Groups, volumes, and iSCSI LUNs and iSCSI Targets, as well as access external disks and manage hard disks or cache. For more detailed information or instructions, please refer to **DSM Help**.

Overview

Overview displays the status of your storage spaces, including the overall health of all storage spaces, hard disk usage, top volume usage, and iSCSI LUN usage. You can view the **Overview** tab by going to **Main Menu** > **Storage Manager** > **Overview**. For detailed information, please see **DSM Help**.

Manage RAID Groups

With your Synology NAS, you may combine multiple hard disks into a single storage unit called a RAID Group. Volumes or iSCSI LUNs (Block-Level) can be created on top of RAID Groups. Before creating a RAID Group, please confirm sufficient hard disks are installed in your Synology NAS (refer to your Synology NAS *Quick Installation Guide* for instructions regarding hard disk installation).



Create RAID Groups

RAID Groups can be created by going to **Main Menu** > **Storage Manager** > **RAID Group**, and clicking **Create**. For detailed instructions regarding RAID Group creation, please see **DSM Help**.

RAID Group Types

Your Synology NAS supports the following RAID Groups types:

- **RAID Group for Single Volume or iSCSI LUN (Block-Level)**
  - Allocates all available capacity to a single volume or iSCSI LUN (Block-Level).
  - Provides better performance but less storage management flexibility.
  - Allows creation of multiple iSCSI LUNs (Regular File) on volumes.
  - Supports a maximum of one RAID Array.
- **RAID Group for Multiple Volumes or iSCSI LUNs (Block-Level)**
  - Supports creating multiple volumes or iSCSI LUNs (Block-Level) on a RAID Group.
  - Provides better storage management flexibility.
  - Allows creation of multiple iSCSI LUNs (Regular File) on volumes.
  - Supports combining multiple RAID Arrays under a RAID Group (when configured as RAID 5 or RAID 6).

RAID Types

Depending on the number of available hard disks, you can create RAID Groups using several different RAID types. Different RAID types provide different levels of performance, data protection, and storage features. Synology NAS supports the following RAID types:

RAID Type	HDD #	Allowed Failed HDD #	Description	Capacity
Basic	1	0	Creates a storage space with one hard disk.	1 x (HDD size)
JBOD	2-12	0	Combines multiple hard disks into a single, large storage space.	Sum of all HDD sizes
RAID 0	2-12	0	**RAID 0** offers **Striping**, a process of dividing data into blocks and spreading the data blocks across several hard drives, but without safety measures.	(HDD #) x (Smallest HDD size)
RAID 1	2 - 4	(HDD #) - 1	Writes a mirrored copy of data to each hard drive, providing data redundancy and protection as long as one hard disk is operating normally.	Smallest HDD size
RAID 5	3-12 per RAID Array	1 HDD within each RAID Array	Stripes both data and parity information across all member disks, providing data redundancy. If one hard disk fails, the system may be rebuilt using parity data from other member hard disks Supports combining multiple RAID Arrays when created on a RAID Group for Multiple Volumes or iSCSI LUNs (Block-Level)	Total capacity of combined RAID Arrays. RAID Array capacity = (HDD # - 1) x (Capacity of smallest HDD).
RAID 6	4-12 per RAID Array	2 HDD within each RAID Array	**RAID 6** provides extra data protection. It uses parity mode to store redundant data on space equal to the size of two disks for later data recovery. Supports combining multiple RAID Arrays when created on a RAID Group for Multiple Volumes or iSCSI LUNs (Block-Level)	Total capacity of combined RAID Arrays. RAID Array capacity = (HDD # - 2) x (Capacity of smallest HDD)
RAID 10	4-12 per RAID Array (even number)	1 HDD within each RAID 1 group	Provides the performance of **RAID 0** and data protection level of **RAID 1**. **RAID 10** combines two hard drives into a RAID 1 group, and combines all the groups with RAID 0.	(HDD # / 2) x (Smallest HDD size)

Change RAID Types

The RAID types of existing RAID Groups can be changed without losing existing data, allowing you to easily and economically manage storage capacity. To change the RAID type of a RAID Group, there must be available hard disks installed in the Synology NAS. The table below displays supported types of RAID change. For more detailed instructions regarding how to change RAID types, please refer to **DSM Help**.

RAID Type	Can be changed to…
Basic	RAID 1 or RAID 5
RAID 1	RAID 5
RAID 5	RAID 6
RAID 1	Add mirror disk

Repair RAID Groups

When one of the hard disks belonging to a RAID Group fails, the RAID Group status will change to **Degraded**. You can replace failed hard disks and repair the RAID Group, as long as the RAID Group is one of the following RAID types: RAID 1, RAID 5, RAID 6, and RAID 10.

For detailed instructions regarding how to repair RAID Groups, please refer to **DSM Help**.

Expand RAID Groups

The storage capacity of RAID Groups can be gradually expanded by installing more or larger hard disks. This feature allows you to expand the capacity of your RAID Group according to your budget and with no need to worry about losing any existing data.

The sections below provide basic information regarding expanding RAID Groups. For more detailed instructions, please see **DSM Help**.

Expand RAID Groups by Installing Larger Hard Disks

You can expand the storage capacity of RAID Groups by replacing existing hard disks with larger ones. This feature is available for following RAID 1, RAID 5, and RAID 6. Associated volumes or iSCSI LUN on RAID Group for single volume or iSCSI LUN will be expanded automatically.

Expand RAID Groups by Installing Additional Hard Disks

You can expand the storage capacity of RAID Groups by installing and adding additional hard disks. This feature is available for JBOD, RAID 5, and RAID 6.

For RAID Groups with total capacity less than 64TB, the system expands capacity automatically. For RAID Groups with total capacity higher than 64TB, please click **Manage** > **Expand** to expand the capacity of your RAID Group.

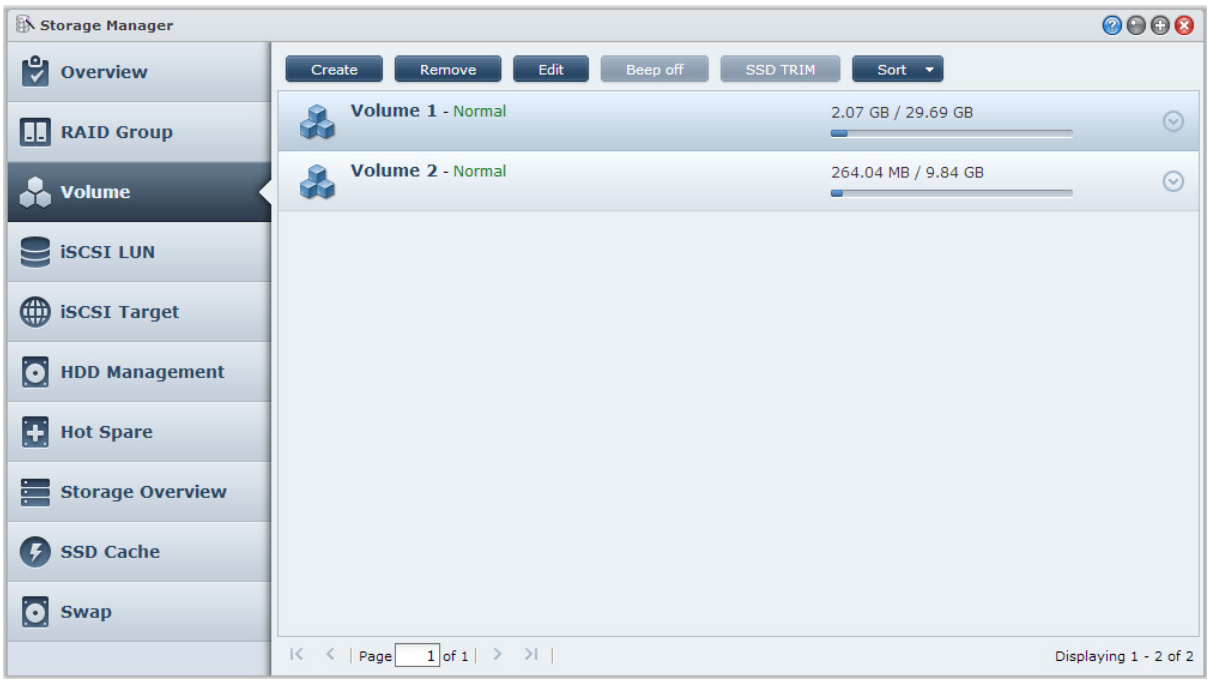
Data Scrubbing

Data scrubbing is a data maintenance function that inspects RAID Groups and repairs any detected data inconsistencies. This function can be used with RAID Groups that implement RAID 5 or RAID 6. We recommend regularly performing data scrubbing in order to maintain data consistency and avoid losing any critical data in the event of disk failure.

For detailed instructions regarding how to perform data scrubbing, please refer to **DSM Help**.

Manage Volumes

Volumes are basic storage spaces on which you can create shared folders, iSCSI LUNs (regular file), save data, or install packages. Before creating a volume on your Synology NAS, please create at least one RAID Group.



Create Volumes

To create a volume, please go to **Main Menu** > **Storage Manager** > **Volume,** and click **Create**. For more detailed instructions, please see **DSM Help**.

Volume Types

Depending on the underlying RAID Group type, you may create the following types of volumes:

- **Volume on RAID Group for Single Volume or iSCSI LUN (Block-Level)**
  - Allocates all storage capacity on a RAID Group to a single volume. Provides better performance but less management flexibility.
  - Allows creation of multiple iSCSI LUNs (Regular File) on volumes.
- **Volume on RAID Group for Multiple Volumes or iSCSI LUNs (Block-Level)**
  - Allocates a designated portion of the storage capacity on a RAID Group to create a volume. Provides better management flexibility, allowing you to expand volume size or create additional volumes as needed.
  - Allows creation of multiple iSCSI LUNs (Regular File) on volumes.

Edit Volumes

If you want to change the description of a volume or edit the amount of allocated storage capacity, please go to **Main Menu** > **Storage Manager** > **Volume**, select the desired volume, and click **Edit**.

Repair Degraded Volumes

If a volume status reads **Degraded**, please go to **Main Menu** > **Storage Manager** > **RAID Group**, and follow the instructions displayed under the RAID Group status. Please refer to **DSM Help** for more information.

SSD TRIM

If a volume consists entirely of SSDs (Solid State Drives), we recommend enabling SSD TRIM. This feature optimizes the read and write performance of volumes created on SSDs, increasing efficiency as well as extending the lifetime of your SSDs.

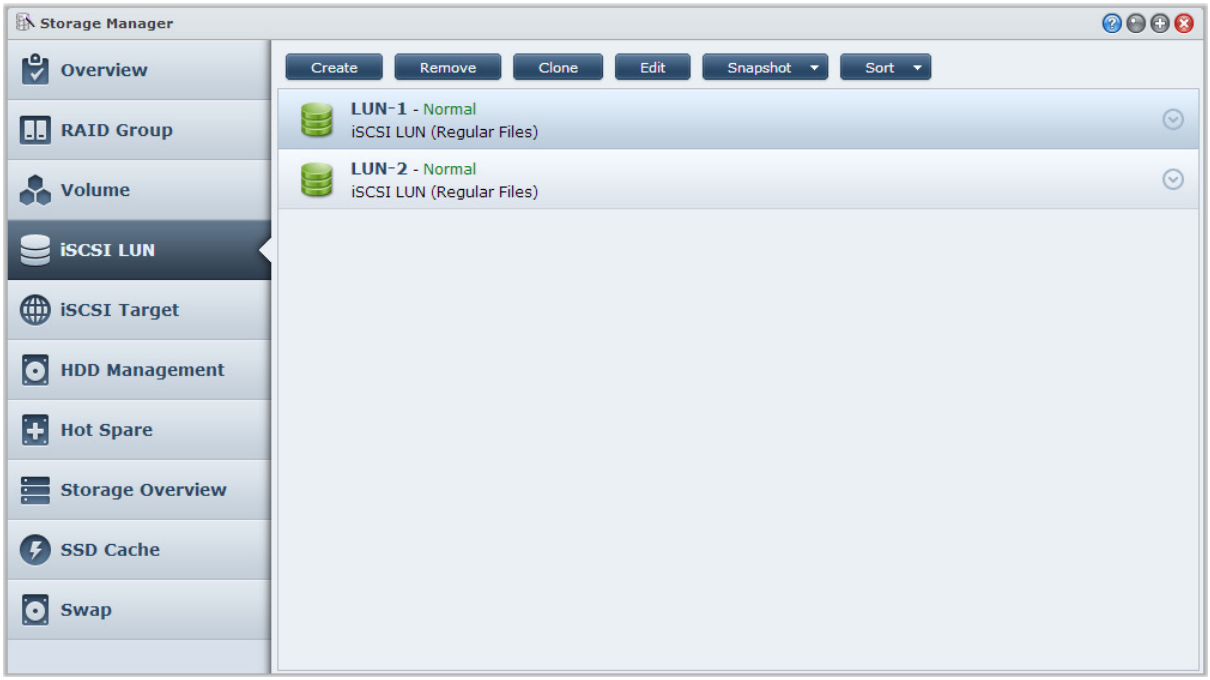
Before trying to set up SSD TRIM, please see **DSM Help** for detailed instructions and more limitations.

Note:

- SSD TRIM is only available on certain Synology NAS models and RAID types.
- Some SSD models are not able to perform SSD TRIM on RAID 5 and RAID 6 volumes. Please refer to the compatibility list at **www.synology.com**.

Manage iSCSI LUNs

iSCSI is an Internet Protocol based storage networking standard for linking data storage facilities. iSCSI facilitates data transfer over local area networks (LANs), wide area networks (WANs), or the Internet. By mapping iSCSI Targets and iSCSI LUNs, client servers can access space on a storage server as if it were a local disk.



iSCSI LUN Types

Synology NAS currently supports the following types of iSCSI LUNs:

- **iSCSI LUN (Regular Files)**: This type of iSCSI LUN is created by designating a portion of a volume. It may be later expanded as needed. This type of iSCSI LUN provides flexibility of dynamic capacity management with Thin Provisioning.
- **iSCSI LUN (Block-Level)**: This type of iSCSI LUN is created on a RAID Group and provides flexibility of dynamic capacity management in addition to optimized access performance. You can expand this type of iSCSI LUN later using unallocated space on the RAID Group.

Create, Edit, or Remove iSCSI LUNs

You can manage iSCSI LUNs by going to **Main Menu** > **Storage Manager** > **iSCSI LUN**. For detailed instructions regarding how to create, modify, or remove iSCSI LUNs, please refer to **DSM Help**.

Manage iSCSI Targets

By mapping iSCSI Targets and iSCSI LUNs, client servers can access space on a storage server as if it were a local disk. In reality, all data transferred to the disk are actually transferred over the network to the storage server.

Create, Edit, or Remove iSCSI Targets

You can manage iSCSI Targets by going to **Main Menu** > **Storage Manager** > **iSCSI Target**. For detailed instructions regarding how to create, modify, remove, or register iSNS server information, please refer to **DSM Help**.

Manage Hard Disks

HDD Management section of Storage Manager allows you to monitor the status of hard disks installed on your Synology NAS, providing options to manage and analyze hard disk performance and health. To see this section, please go to **Main Menu** > **Storage Manager** > **HDD Management**.

Enable Write Cache Support

Depending on the model, write cache support can be enabled in order to enhance the performance of your Synology NAS. Disabling write cache will reduce the chances of data loss caused by abnormal power outages, but system performance will decline. To modify write cache support settings, please go to **Main Menu** > **Storage Manager** > **HDD Management**.

We recommend using a UPS to ensure data protection when write cache support is enabled. In addition, the system should be shut down properly every time after use.

S.M.A.R.T. Test

S.M.A.R.T. test examines and reports the status of your hard disks, alerting you to possible disk failures. If you want to a run S.M.A.R.T. test, go to **Main Menu** > **Storage Manager** > **HDD Management**. For more information regarding S.M.A.R.T. tests, please refer to **DSM Help**.

Hot Spare

Hot Spare disks are standby hard disks that can repair a degraded RAID Group by automatically replacing a failed disk. Hot spare disks need not be assigned to a specific RAID Group, but may be globally assigned to repair any RAID Group within your Synology NAS. Before assigning hot spare disks, please see the following requirements:

- The RAID type of the volume/Disk Group/iSCSI LUN must be one with data protection (i.e. RAID 1, RAID 5, RAID 6, RAID 10).
- The hot spare disk size must be equal to or larger than the size of the smallest disk in the volume/Disk Group/iSCSI LUN.

Manage Hot Spares

You can assign, remove, or manage Hot Spare disks by going to **Main Menu** > **Storage Manager** > **Hot Spare**. Please refer to **DSM Help** for information regarding Hot Spare management.

Storage Overview

Storage Overview shows the status of installed hard disks, cable connections, and hardware status lights. You can view Storage Overview by going to **Main Menu** > **Storage Manager** > **Storage Overview**. Please refer to **DSM Help** for a detailed explanation of this section.

SSD Cache

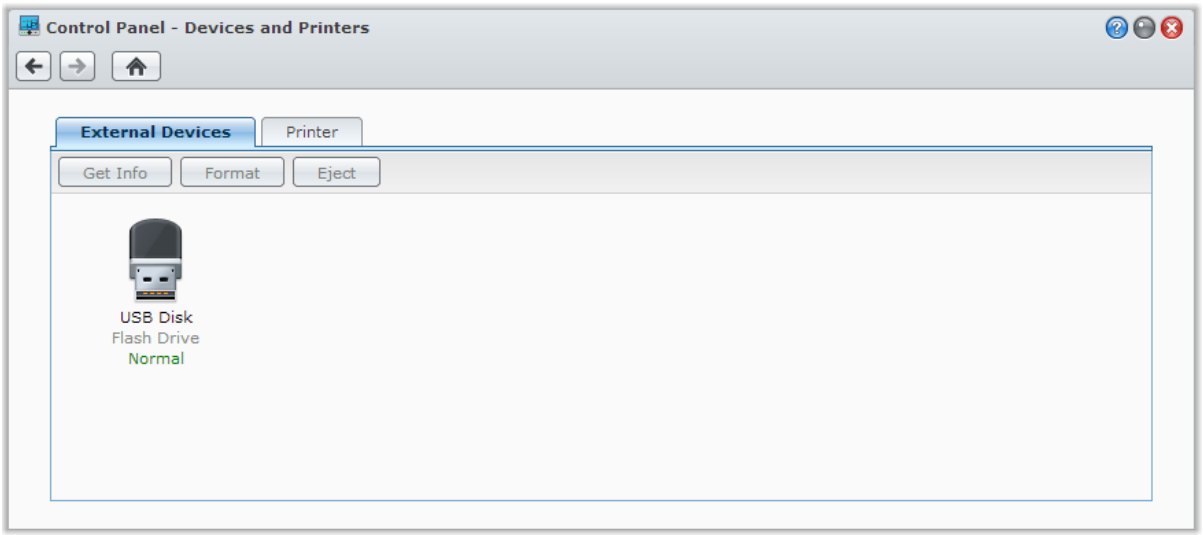
SSD cache drives can be installed and mounted in a RAID 0 configuration to boost the read speed of a volume, including iSCSI LUN (Regular Files) on a volume, or iSCSI LUN (Block-Level) on your Synology server. You can mount, check SSD compatibility, and view related information by going to **Main Menu** > **Storage Manager** > **SSD Cache**.

Please refer to your Synology server Quick Installation Guide for information regarding SSD installation. Additionally, refer to **DSM Help** for information regarding SSD management.

Manage External Disks

External USB or eSATA disks can be attached to the USB or eSATA port of your Synology RackStation for backup or file sharing purposes.[1]

Go to **Main Menu** >**Control Panel** >**Devices and Printers** >**External Devices** to manage attached external disks or setup printers. The **External Devices** tab provides options to view device information, change formats, or eject the device. The **Printer** tab provides options to setup USB or network printers. For more detailed instructions, please see **DSM Help**.



[1] eSATA is supported on specific models only. Visit www.synology.com for more information.

Chapter

6

Access your Synology NAS from the Internet

You can connect to your Synology NAS over the Internet, allowing its services to be accessible from anywhere and anytime.

This chapter explains the basics regarding using the Synology EZ-Internet wizard, advanced port forwarding functions, and DDNS hostname registration to connect your Synology NAS to the Internet. For more detailed instructions, please see **DSM Help**.

Use the EZ-Internet Wizard

The **EZ-Internet** Wizard can set up access via the Internet with an easy-to-use wizard, without going through the complicated firewall settings, PPPoE setup, DDNS registration, and router port forwarding configuration. Go to **Main Menu** > **EZ-Internet** and follow the wizard to complete the setup.

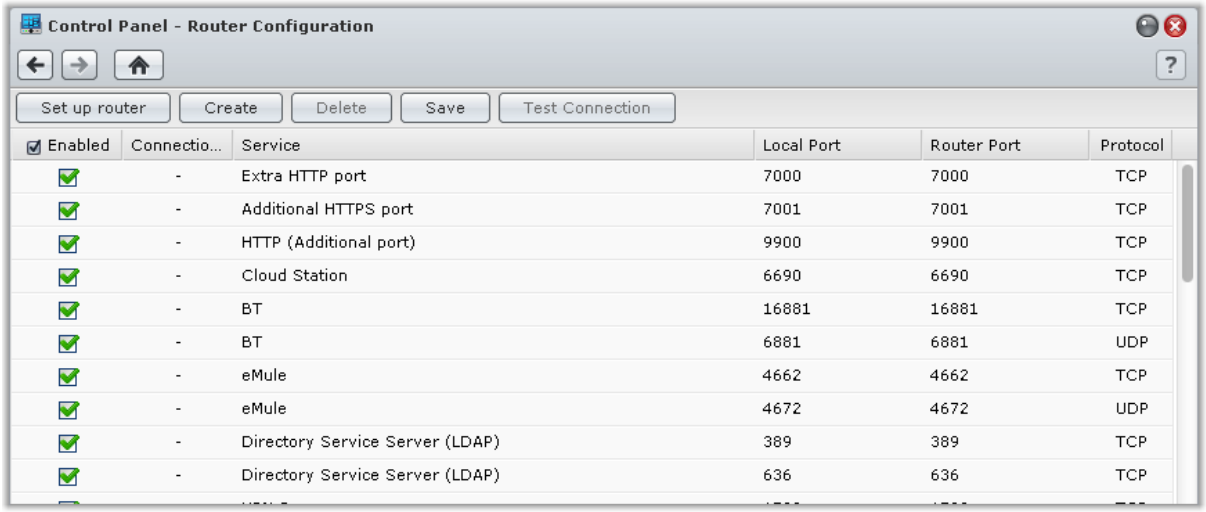
EZ-Internet Wizard
EZ-Internet Wizard
Welcome to Synology EZ-Internet Wizard
The Synology EZ-Internet Wizard will assist you in setting up remote Internet access to DiskStation. You will be guided through the following settings:
Set up Internet connection
Set up port forwarding
Set up firewall
Set up DDNS service
Next
Cancel

Set Up Port Forwarding Rules for Router

If your Synology NAS is within the local network, you can set up port forwarding rules for the router to allow your Synology NAS to be accessible over the Internet.

Note: Before you start, make sure you have manually assigned a static IP address for your Synology NAS. See "Network Interface" for more information.

Go to **Main Menu** > **Control Panel** > **Router Configuration** to set up your router and port forwarding rules. For more detailed instructions, please see **DSM Help**.



Note: To configure port forwarding rules and assign static IP address, you must have the administrative permission to the router.

Set up Router

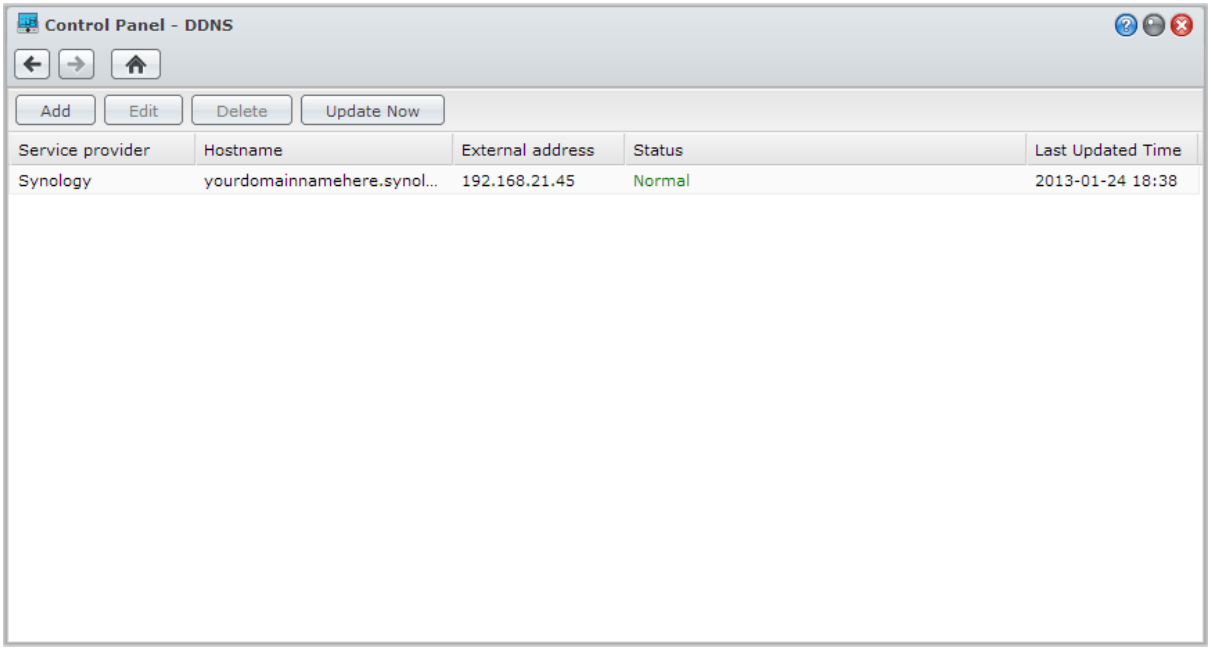
Before adding port forwarding rules with DSM, you need to set up the Synology NAS connection to the router. To begin, please click the **Set up router** button.

Add Port Forwarding Rules

Add port forwarding rules to specify the destination ports of your Synology NAS that will receive packages from specific router ports. Click **Create** to start creating port forwarding rules.

Register DDNS for the Synology NAS

DDNS (Dynamic Domain Name Service) simplifies connecting to your Synology NAS over the Internet by mapping a hostname to its IP address. For example, DDNS allows you to access your Synology NAS using a domain name (e.g. www.john.synology.me), with no need to remember an IP address (e.g. 172.16.254.1).



Service Requirement

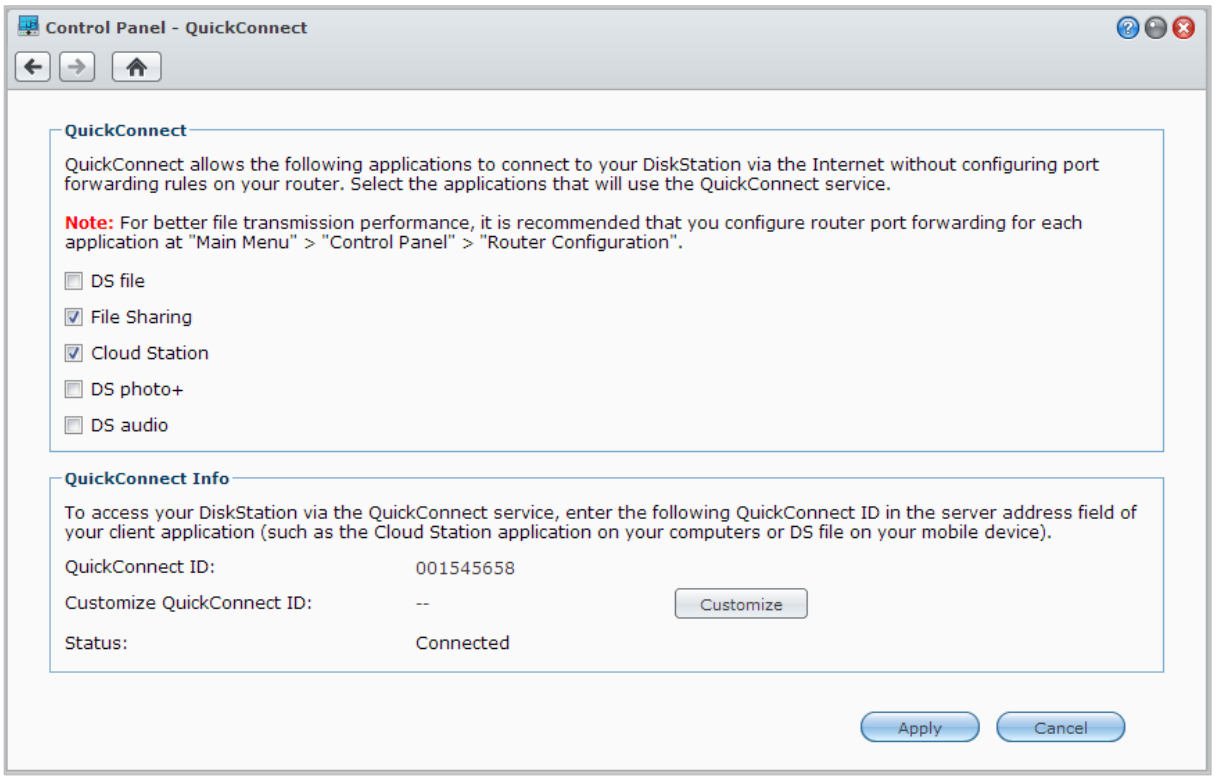
- The servers of the DDNS service provider are working normally.
- The Synology NAS is able to connect to the Internet.
- DDNS will only run in a network environment where there is no proxy server required.
- You can only enter one hostname for each DDNS provider.

Register a DDNS hostname for Synology NAS

Go to **Main Menu** > **Control Panel** > **DDNS**. You can point an existing hostname at the IP address of your Synology NAS, or register for a new one provided by Synology or several other DDNS providers. Please consult each provider for more details regarding hostname registration.

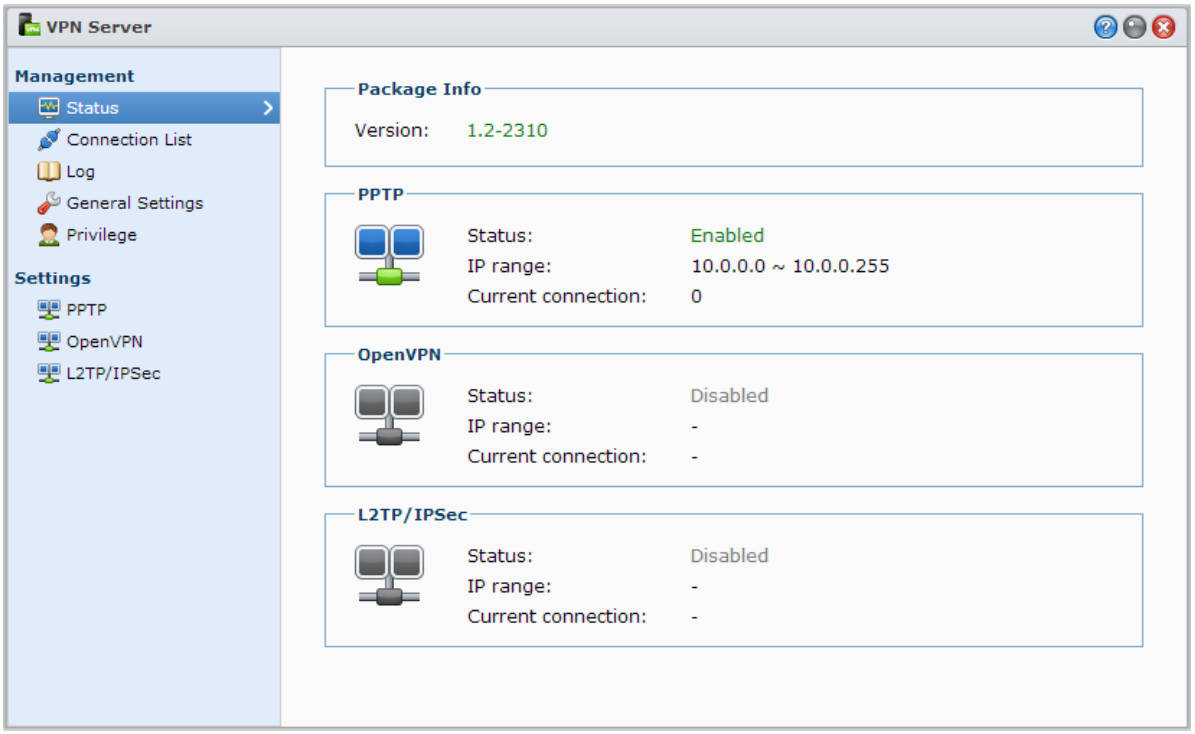
Access DSM Services via QuickConnect

QuickConnect is a solution that helps client applications (such as DS file, Cloud Station, DS audio, etc.) connect to your Synology NAS via the Internet without setting up port forwarding rules. Go to **Main Menu** > **Control Panel** > **QuickConnect** to manage the QuickConnect service. For more details regarding QuickConnect, please see **DSM Help**.


Control Panel - QuickConnect
QuickConnect
QuickConnect allows the following applications to connect to your DiskStation via the Internet without configuring port forwarding rules on your router. Select the applications that will use the QuickConnect service.
Note: For better file transmission performance, it is recommended that you configure router port forwarding for each application at "Main Menu" > "Control Panel" > "Router Configuration".
DS file
File Sharing
Cloud Station
DS photo+
DS audio
QuickConnect Info
To access your DiskStation via the QuickConnect service, enter the following QuickConnect ID in the server address field of your client application (such as the Cloud Station application on your computers or DS file on your mobile device).
QuickConnect ID:
001545658
Customize QuickConnect ID:
--
Customize
Status:
Connected
Apply
Cancel

Set up VPN Connection

VPN Server is an add-on package that enables your Synology NAS to become a PPTP, OpenVPN, or L2TP/IPSec VPN (virtual private network) server, allowing DSM local users over the Internet to access resources shared within local area network of the Synology NAS.



Set up your Synology NAS as a VPN Server

To install VPN Server on your Synology NAS, go to **Main Menu** > **Package Center**. For more information about VPN Server, run and launch the package, and then click on the **DSM Help** button (with a question mark) at the top-right corner.

Connect your Synology NAS to a VPN Server

Go to **Main Menu** > **Control Panel** > **VPN** to set your Synology NAS as a VPN client to connect to a VPN server, and then gain access to the virtual private network. For each VPN server, you can create or modify its connection profile, and then use the profile to connect to the server with a simple click.

> ***Note:*** Your Synology NAS cannot be set as a VPN server and client at the same time.

Chapter

7

Enhance Internet Security

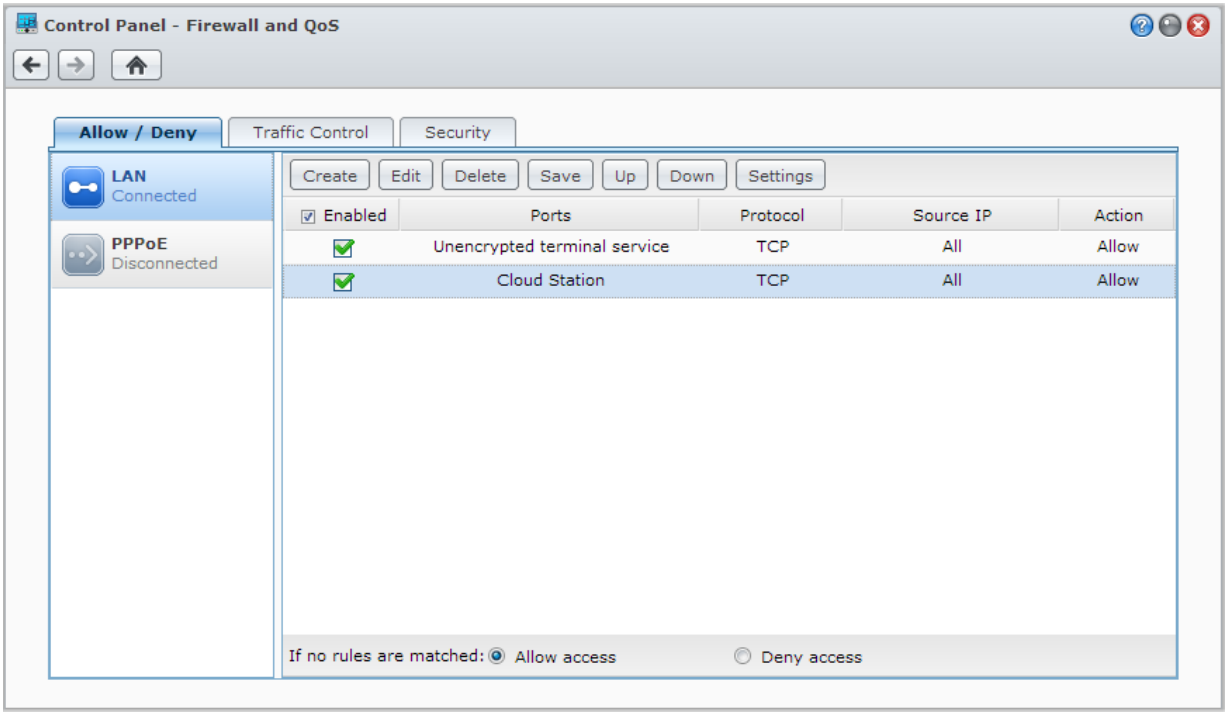
After your Synology NAS is available on the Internet, you will need to safeguard it against any attacks from Internet hackers.

This chapter explains how to set up firewall, control outgoing traffic, enable DoS protection and enable auto block. For more detailed instructions, please see **DSM Help**.

Prevent Unauthorized Connection with Firewall

The built-in firewall can prevent unauthorized logins, and control which services can be accessed. In addition, you can choose to allow or deny access to certain network ports from specific IP addresses.

Go to **Main Menu** > **Control Panel** > **Firewall and QoS** > **Allow / Deny**, and click **Create** to create firewall rules.



Apply Firewall Rules to Ports

In the **Ports** section, apply firewall rules to all ports or selected ports using one of the following options:

- **All**: Choose this option to apply the rule to all ports on Synology NAS.
- **Select from a list of built-in applications**: Tick the system services that will be included in the rule.
- **Custom**: Specify the type and protocol of the port, and enter the custom port number.

  You can enter up to 15 ports separated with comma, or by specifying a port range.

Apply Firewall Rules to Source IP Addresses

In the **Source IP** section, choose to allow or deny access from a source IP addresses using one of the following options:

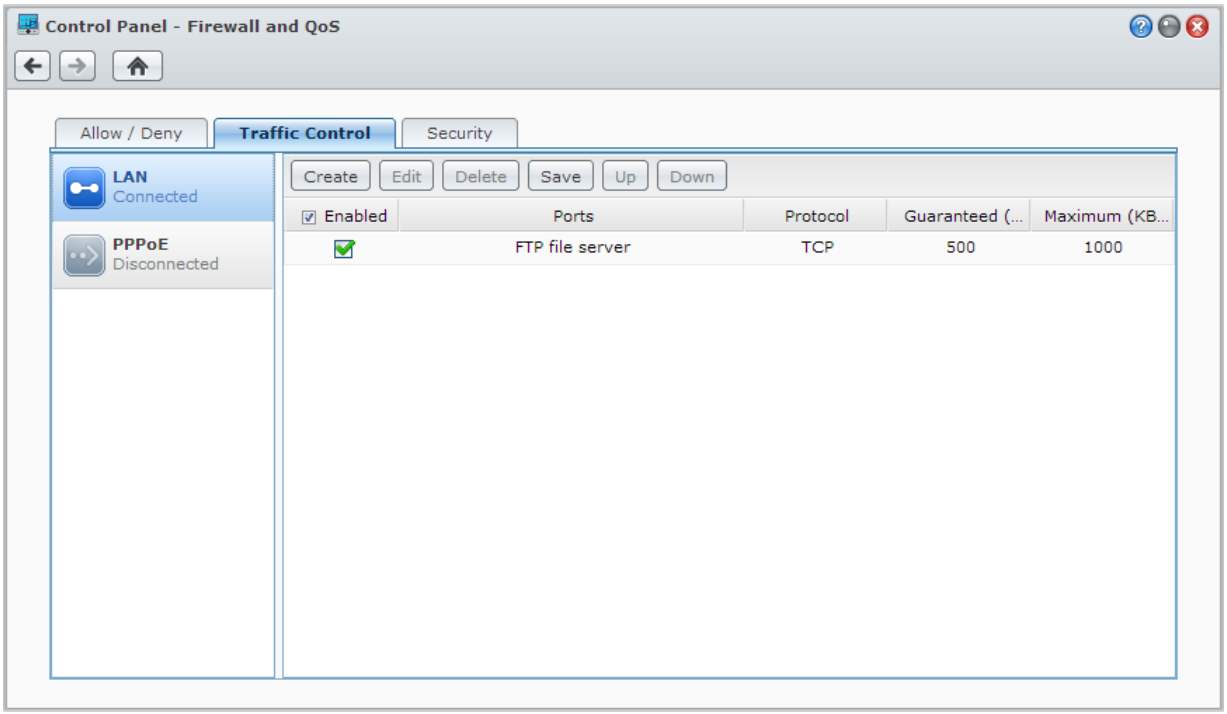
- **All**: Choose this option to apply the rule to all source IP addresses.
- **Single host**: Choose this option to apply the rule to an IP address.
- **Subnet**: Choose this option to apply the rule to a subnet.

Note:

- When you combine multiple LAN ports with link aggregation, firewall will apply the rules from the first network interface, and reserve the rules of the second network interface. For more information about link aggregation, see "LAN".[1]
- If your system has multiple network ports connecting to the same subnet, the firewall rules might not work properly.

Control the Outgoing Traffic of Services

Traffic control aims to control the outgoing traffic of services running on the Synology NAS. Go to **Main Menu** > **Control Panel** > **Firewall and QoS** > **Traffic Control**, and click **Create** to create traffic control rules.



Apply Traffic Control Rules to Ports

In the **Ports** section, apply firewall rules to all ports or selected ports using one of the following options:

- **All**: Choose this option to apply the rule to all ports on Synology NAS.
- **Select from a list of built-in applications**: Tick the system services that will be included in the rule.
- **Custom**: Specify the type and protocol of the port, and enter the custom port number.

  You can enter up to 15 ports separated with comma, or by specifying a port range.

[1] Link Aggregation is supported on specific models only.

Configure Bandwidth Settings

After selecting a service, you will need to set **Guaranteed Bandwidth** and **Maximum Bandwidth** to limit its outgoing traffic.

- **Guaranteed Bandwidth**

  Defines the outgoing traffic a service guarantees to serve when the whole system bandwidth is wide enough.

- **Maximum Bandwidth**

  Defines the outgoing traffic this service can borrowed when the whole system bandwidth is enough and there is **System Remaining Bandwidth**. It is suggested that the system manager calculate **System Output Bandwidth** first and then make sure the sum of **Guaranteed Bandwidth** for each service is not greater than **System Output Bandwidth**, or the setting may not work correctly.

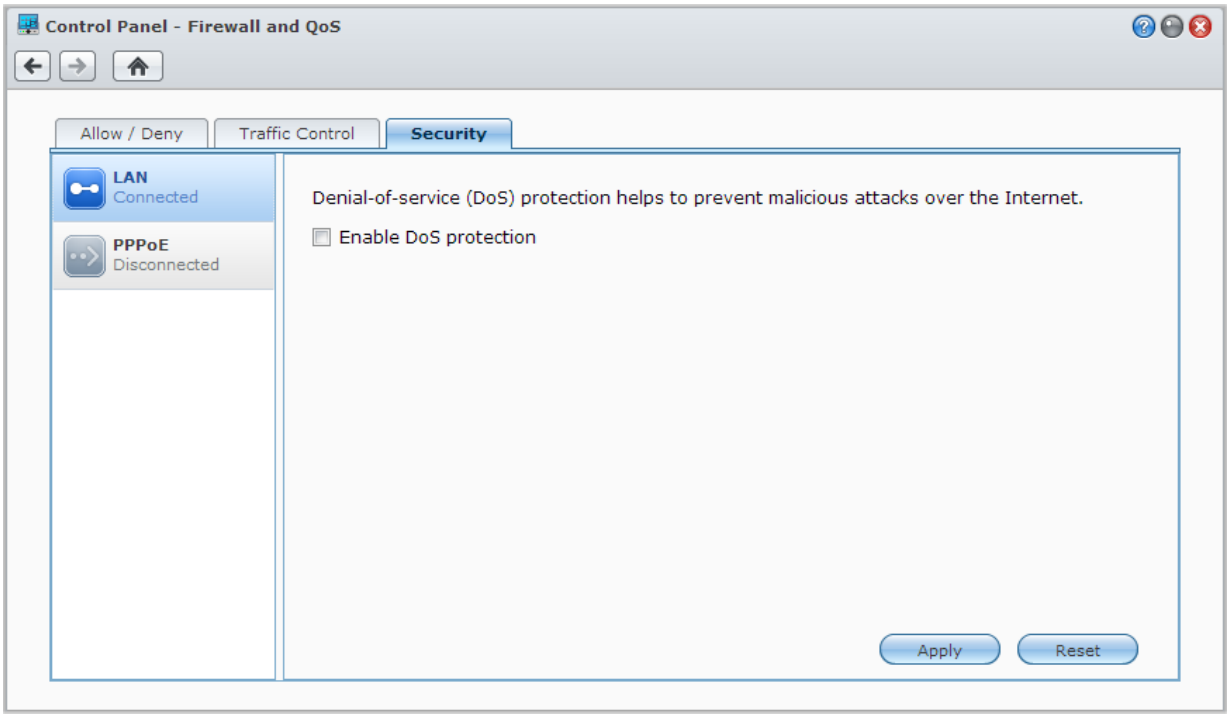
Setting Formula

System Output Bandwidth = Sum of **Guaranteed Bandwidth** of each service + **System Remaining Bandwidth**

Guaranteed Bandwidth for each service ≤ **Maximum Bandwidth** for each service

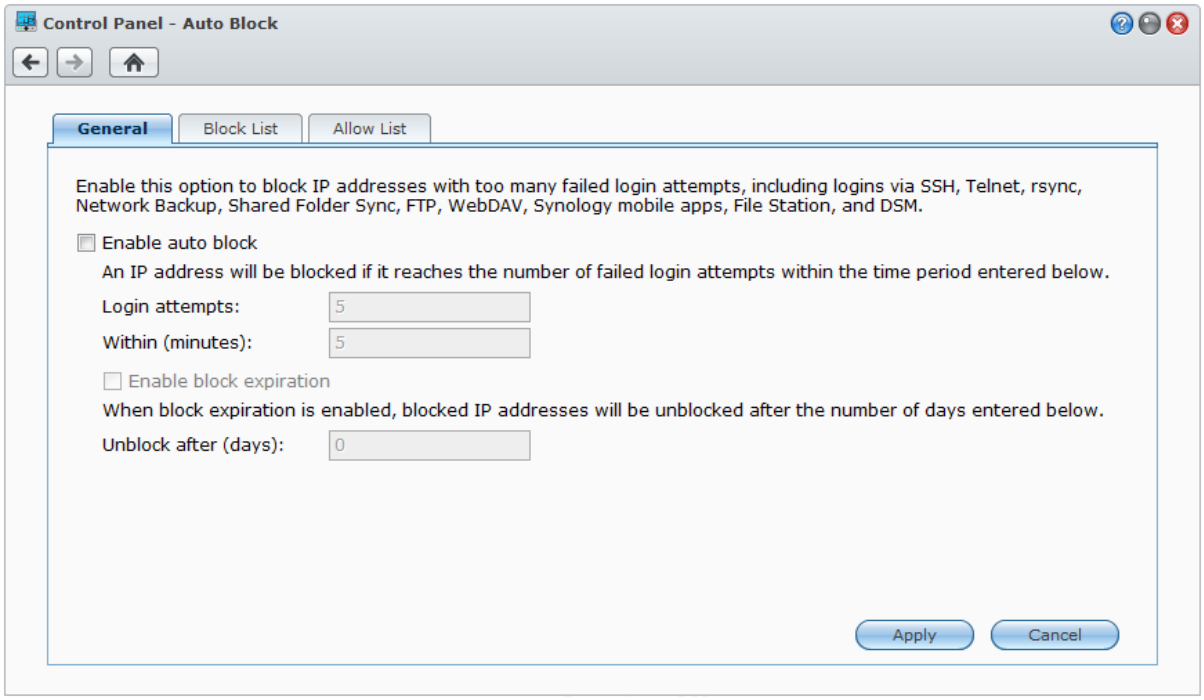
Prevent Attacks over the Internet

Denial-of-service (DoS) protection helps to prevent malicious attacks over the Internet. Go to **Main Menu** > **Control Panel** > **Firewall and QoS** > **Security** to enable DoS protection and improve network security.



Automatically Block Suspicious Login Attempts

Auto block allows you to prevent unauthorized login. After enabling the service, an IP address will be blocked if it has too many failed login attempts. Go to **Main Menu** > **Control Panel** > **Auto Block** to create and manage your block list and allow list.


Control Panel - Auto Block
General
Block List
Allow List
Enable this option to block IP addresses with too many failed login attempts, including logins via SSH, Telnet, rsync, Network Backup, Shared Folder Sync, FTP, WebDAV, Synology mobile apps, File Station, and DSM.
Enable auto block
An IP address will be blocked if it reaches the number of failed login attempts within the time period entered below.
Login attempts:
5
Within (minutes):
5
Enable block expiration
When block expiration is enabled, blocked IP addresses will be unblocked after the number of days entered below.
Unblock after (days):
0
Apply
Cancel

Chapter 8

Set Up File Sharing

Synology NAS can become the file sharing center within the local network or over the Internet, allowing users to access its files anytime and anywhere. For more detailed instructions, please see **DSM Help**.

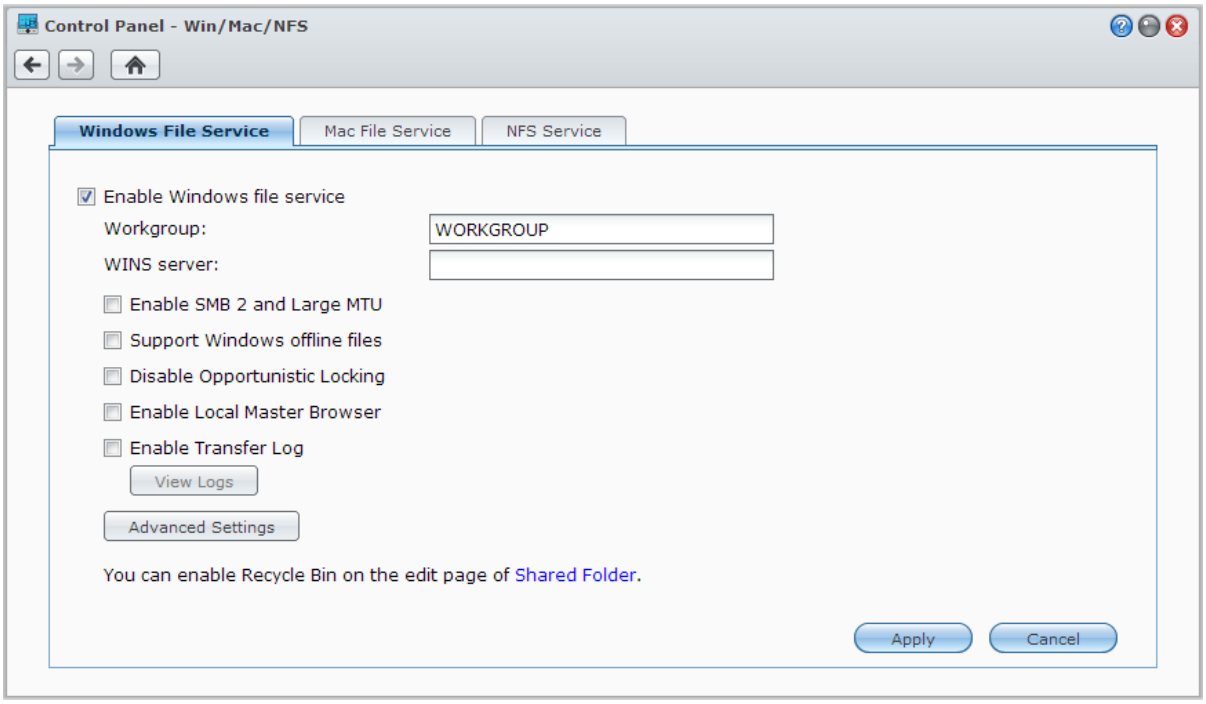
This chapter explains how to enable the support for file sharing protocols for all platforms, create and manage users and groups, set up shared folders, and allow or deny access to the shared folders, applications or subfolders from specific users or groups.

Enable File Sharing Protocols for All Platforms

This section tells you how to allow the Synology NAS to support file sharing protocols for all platforms.

Synology NAS supports the following file sharing protocols:

- **For Windows:** SMB/CIFS (My Network Places), FTP, WebDAV
- **For Mac:** SMB, FTP, AFP, WebDAV
- **For Linux:** SMB, FTP, NFS, WebDAV



Manage Windows File Service

Click the **Windows File Service** tab at **Main Menu** > **Control Panel** > **Win/Mac/NFS** to enable Windows file service on the Synology NAS.

Manage Mac File Service

Click the **Mac File Service** tab at **Main Menu** > **Control Panel** > **Win/Mac/NFS** to make Synology NAS a Mac file server (AFP Server).

Tick **Enable Bonjour Printer Broadcast** to allow Mac clients to browse and locate the printer connected to Synology NAS.

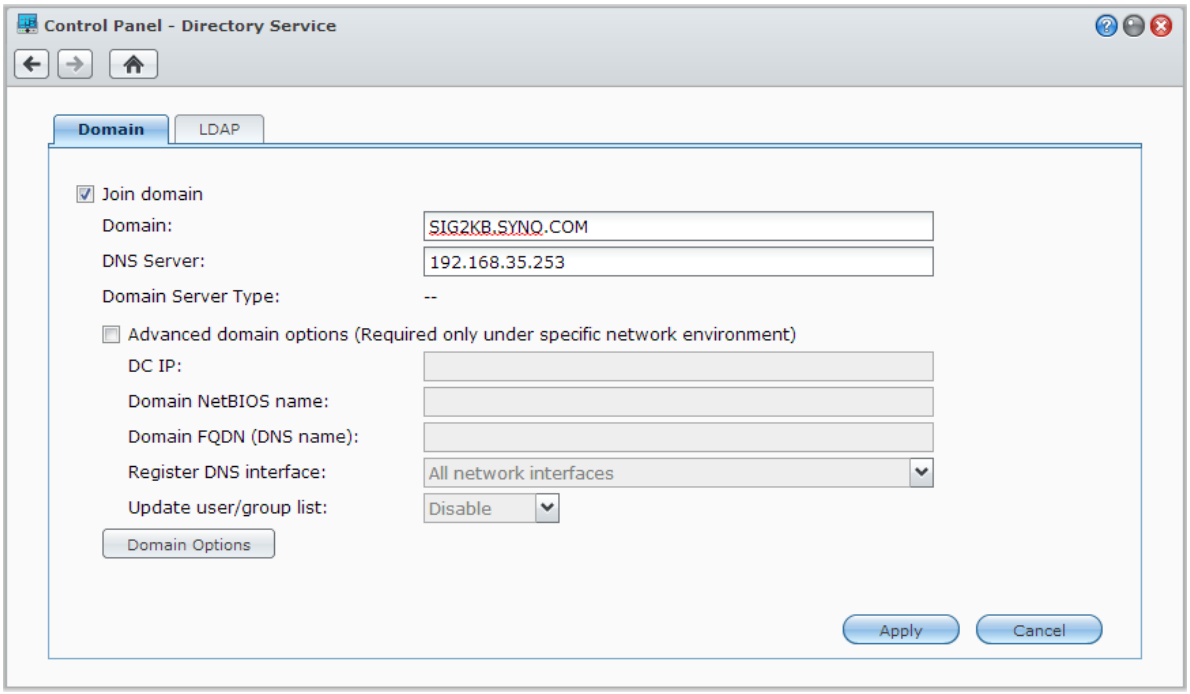
Enable NFS Service for Linux Clients

Click the **NFS Service** tab at **Main Menu** > **Control Panel** > **Win/Mac/NFS** to allow Linux client to access the Synology NAS data.

If you want to configure Linux client's NFS access privileges to the shared folders, see "Allow Users or Groups to Access Shared Folders" for more information.

Join Synology NAS to Directory Service

Go to **Main Menu** > **Control Panel** > **Directory Service** to join your Synology NAS to a directory service as a Windows domain or LDAP client. When the Synology NAS is joined to a directory service, you can manage domain/LDAP users' access privileges to shared folders and DSM applications and enable their home service.



Joining a Windows Domain

Click the **Domain** tab, and enter domain name and DNS server (optional) to join the Synology NAS to a Windows ADS domain. In the window that appears, enter the user name and password for the administrator of the domain server.

After Synology NAS joins the domain, domain users can log in to Synology NAS with their domain account and password.

Note:

- If your domain user name includes “%” and “$”, you might not be able to access your home folder. Please ask your domain administrator to give you a new user name.
- Domain groups **Domain Admins** and **Enterprise Admins** will be added to the local group **administrators** automatically. In other words, domain users in these groups have administrative right on the Synology NAS, including performing DSM/CIFS/FTP/AFP/WebDAV applications.
- You can also configure domain users’ access privileges to the shared folders on Synology NAS. See "Allow Domain Users or Groups to Access Shared Folders" for more information.

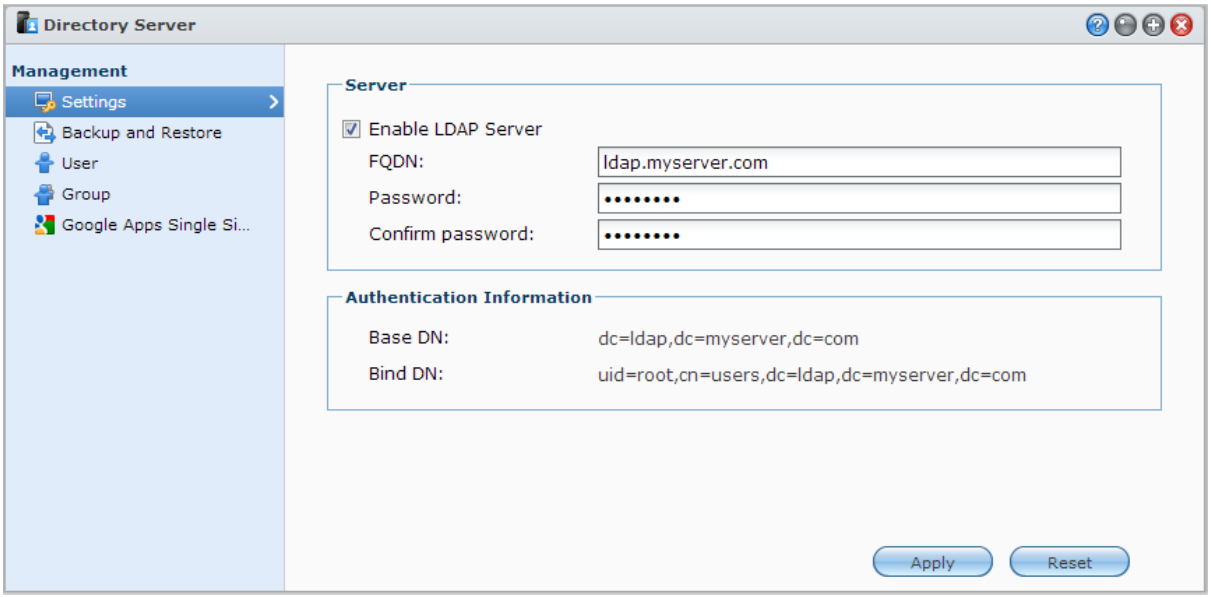
Binding to an LDAP Server

LDAP allows your Synology NAS to join an existing directory service as an LDAP client, and then retrieve user or group information from an LDAP server (or "directory server"). The profiles option allows you to smoothly connect to different types of LDAP servers, such as standard (Synology Directory Servers or Mac Open Directory), IBM Lotus Domino servers, or customize your own profile settings. You can manage LDAP users' or groups' access privileges to DSM applications and shared folders, just as you would with DSM local users or groups.

Host LDAP Service with Directory Server

Directory Server is an add-on package based on LDAP version 3 (RFC2251) that allows your Synology NAS to become an account administration center to centralize the account management of all connecting clients, and provides authentication service for them.

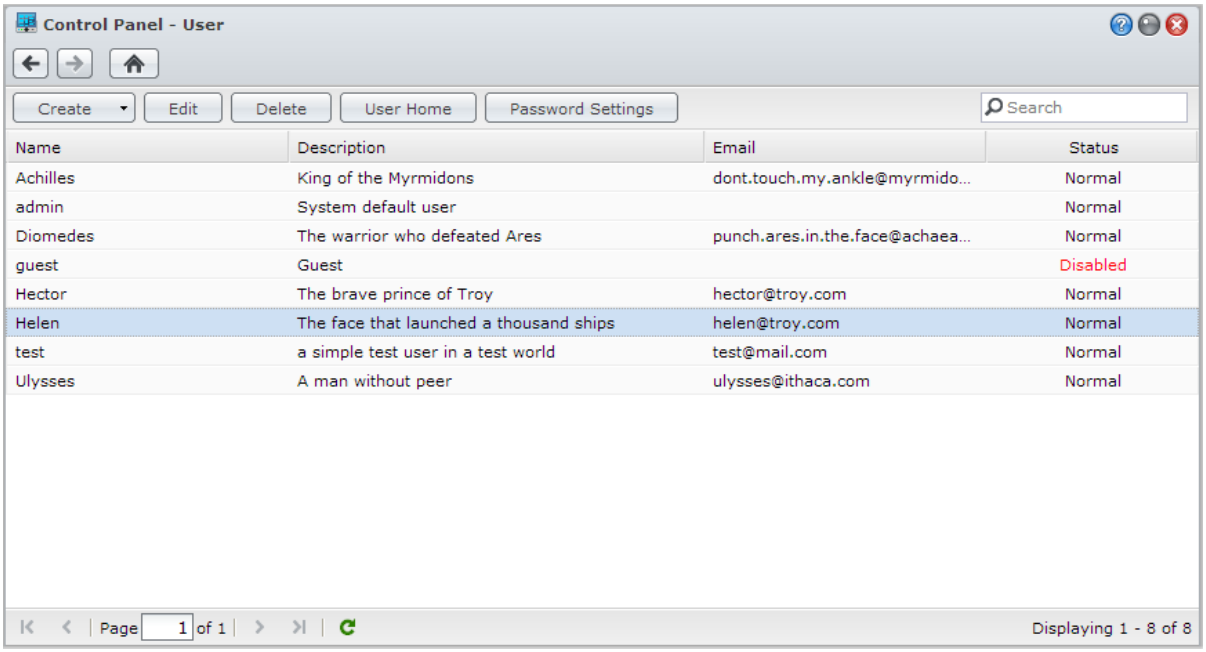
In addition, with **Google Apps Single Sign-On** support, Directory Server can become an identity provider for your Google Apps domain. This allows users to log into Google Apps services (such as Gmail or Google Calendar) using their accounts and passwords stored on Directory Server, eliminating the need for users to remember another set of accounts and passwords.



To install Directory Server on your Synology NAS, go to **Main Menu** > **Package Center**. For more information about Directory Server, please refer to **DSM Help**. To learn more about how to access Directory Server with a LDAP client, refer to the **Directory Server User's Guide** available at Synology's **Download Center**.

Manage Users and Groups

Go to **Main Menu** > **Control Panel** > **User** or **Group** to create users or groups, and allow or deny their access to different shared folders.



Create Users

Click **Create** to create a user account. The user can log in to edit his/her account info after the user account has been established. You can also choose to set an account expiration date or disallow the user to change account password.

Creating User Accounts by Importing User List

Additionally, you can create multiple user accounts by importing a user list. Create a text file which contains the following tab-delimited information in each line:

- Username
- Password
- Description
- Email
- Quota (MB) in volume 1
- Quota (MB) in volume 2 (and so on)

Note:

- All fields are optional except **Username**.
- An example of the text file is shown as follows:

eddy	1234	father	eddy@abc.com	80000
rosy	5678	mother	rosy@abc.com	80000
chaddy	8901	brother	chaddy@abc.com	20000
eric	2345	cousin	eric@abc.com	20000

Save the text file in UTF-8 encoding. Go to **Main Menu** > **Control Panel** > **User** and choose **Create** > **Import Users**.

Allow Self-service Password Reset

If you would like to allow users to reset forgotten passwords via email, you can click Password Settings and tick the box marked **Allow non-admin users to reset forgotten passwords via email**. When this option is enabled, a link marked **Forgot your password?** will appear on the DSM login page. If a user forgets his password, he can click this link and enter his username. In this case, the system will send a message to the user containing a link to reset his forgotten password.

For detailed instructions and notes, please see **DSM Help**.

Apply Password Strength Rules

You can enable password strength service to make sure DSM users' passwords are secure enough to withstand malicious login attempts. Click **Password Settings** to configure this measure of the effectiveness of a password.

Note:

- Password Strength rules only work for passwords created or modified after the Password Strength service is enabled. Existing passwords won't be affected by the rules.
- The rules won't apply to the passwords of users created by importing user list.

Create User's Home Folder

Each DSM user (except for guest) can have his/her own folder called the **home** folder, which is accessible only by the user and the system administrator. Click **User Home** to enable user home service.

For users belonging to the **administrators** group, DSM users' home folders are here: **homes/[Username]**

Note:

- When the user home service is disabled, the **homes** folder will be kept but accessible by users belonging to the **administrators** group only. Users can access their home folders again if the user home service is enabled again.
- To delete the **homes** folder, the user home service must be disabled first.

Create Domain/LDAP User's Home Folder

If you have joined your Synology NAS to a directory service as a Windows domain or LDAP client, you can go to **Main Menu** > **Control Panel** > **Directory Service** > **Domain users** or **LDAP user** to create domain/LDAP users' home folder. Click **User Home** and tick **Enable home service for domain users** or **Enable home service for LDAP users**.

Like local users, all domain/LDAP users can access their own home folder via CIFS, AFP, FTP, WebDAV, or File Station. Users belonging to the **administrators** group can access all personal folders located in the **homes** default shared folder. For users belonging to the **administrators** group, domain/LDAP users' home folders are in the folder named **@DH-domain name** (for domain users) or **@LH-FQDN name** (for LDAP users). The name of the user's home folder is the user account plus a unique number.

Note:

- To delete the **homes** shared folder, user home service must be disabled first.
- Enabling domain/LDAP user home service will also enable the local user home service if it's not enabled yet.
- The domain user home service would be disabled if the local user home service is disabled.

Create Groups

Go to **Main Menu** > **Control Panel** > **Group** to create and edit a group, add users to the group, and then edit the group's properties, saving you the trouble of editing users one by one.

Groups created by default include the following:

- **administrators**: Users belonging to the **administrators** group have the same administrative privilege as **admin**.
- **users**: All users belong to the **users** group.

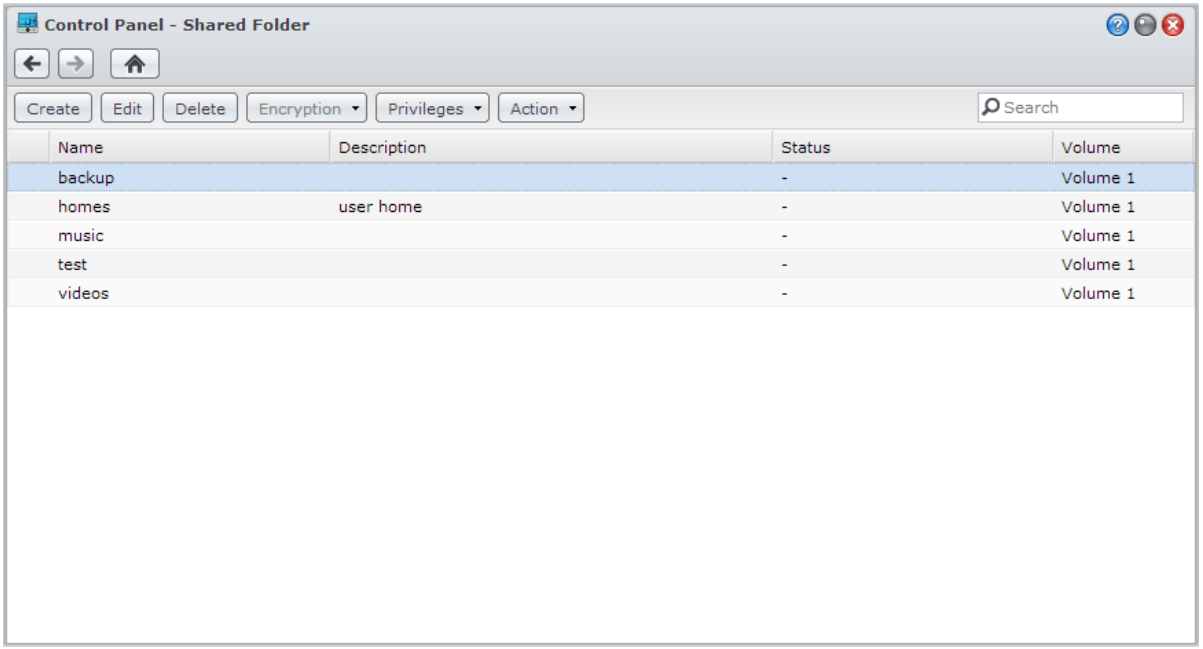
> ***Note:*** For more information about editing a group's access privileges to shared folders or applications, see "Allow Users or Groups to Access Shared Folders" and "Allow Users to Access Applications" for more information.

Allow Users to Access Applications

Go to **Main Menu** > **Control Panel** > **Application Privileges** to decide which applications could be accessed by a user.

Set Up Shared Folders

Go to **Main Menu** > **Control Panel** > **Shared Folder** to manage the shared folders, which are the root folders of Synology NAS. You can store data in the shared folders and share them with users or groups with access privileges.



Built-in Shared Folders Created by the System

System built-in shared folders are created when the services or applications requiring the folders are enabled.

Name	Description
public	The **public** folder will be created automatically after the first time you set up Synology NAS.
web	The **web** folder contains contents of your website. It will be created automatically when Web Station is enabled. For more information about Web Station, see "Use Web Station to Host Websites".
photo	The **photo** folder contains photos and videos you want to share on Photo Station. It will be created automatically when Photo Station or DLNA/UPnP Media Server is enabled. For more information about Photo Station and Media Server, see "Chapter 13: Share Photos, Videos, and Blogs with Photo Station" and "Manage DLNA Media Server".
music	The **music** folder contains music you want to share on Audio Station. It will be created automatically when Audio Station is enabled. For more information about Audio Station, see "Chapter 14: Play Music with Audio Station".
video	The **video** folder contains videos you want to browse through DLNA/UPnP DMA. It will be created automatically when Media Server is enabled. For more information about Media Server, see "Manage DLNA Media Server".
surveillance	The **surveillance** folder contains Surveillance Station recordings. It will be created automatically when Surveillance Station is enabled. It is read-only and can only be accessed by the system administrator. For more information about Surveillance Station, see "Chapter 17: Safeguard Your Environment with Surveillance Station".
home	The **home** folder provides a private space for each user to store data where only the user can access. It will be created automatically when User Home is enabled. For more information about User Home, see "Create User's Home Folder".
homes	The **homes** folder contains the home folders of all users. It will be created automatically when User Home is enabled. Only system administrator can access and manage all users' home folders. For more information about User Home, see "Create User's Home Folder".
NetBackup	The **NetBackup** folder is created automatically when Network Backup Service is enabled. For more information about network backup, see "Network Backup".
usbshare	The **usbshare[number]** folder is created automatically when you connect an USB disk to Synology NAS device's USB port. For more information about external USB disks, see "Manage External Disks".
esatashare	The **esatashare** folder is created automatically when you connect an eSATA disk to Synology NAS device's eSATA port. For more information about external eSATA disks, see "Manage External Disks".

Create a Shared Folder

If you are a user belonging to the **administrators** group, you can click **Create** to create shared folders and assign access privileges to the folders.

Remove a Shared Folder

If you are a user belonging to the **administrators** group, you can click **Delete** to remove any shared folder created by yourself.

Important: Removing any shared folder also removes all data within it. If you still need the data, back them up first.

Allow Users or Groups to Access Shared Folders

Go to **Main Menu** > **Control Panel** > **Shared Folder**, click **Privileges** and choose **Privileges Setup** to allow or deny users' or groups' access to the shared folders.

Note:

- To set the access privileges to subfolders, you can use File Station. See "Edit the Properties of Files and Subfolders" for more information.
- When you encounter privilege conflicts, the privilege priority is as follows: **No access** > **Read/Write** > **Read only**.
- When you create a new shared folder, if the access privilege of users belonging to the **administrators** group to the folder is set as **No access**, then users belonging to the **administrators** group will only be able to see the folder by going to **Main Menu** > **Control Panel** > **Shared Folder**.

Allow Linux Clients to Access Shared Folders

Select a shared folder from the shared folder list, click **Privileges** and choose **NFS Privileges** to assign NFS privileges.

Term Explanation
Asynchronous: NFS servers will reply to requests before the changes on the file are completed.

Allow Domain Users or Groups to Access Shared Folders

If you have joined your Synology NAS to a directory service as a Windows domain or LDAP client, you can go to **Main Menu** > **Control Panel** > **Directory Service** > **LDAP User**, **LDAP Group**, **Domain users**, or **Domain Group** to set up and modify the shared folder privileges of a domain/LDAP user or group.

Note: In the event of privilege conflicts, the privilege priority will be: No access (NA) > Read/Write (RW) > Read only (RO).

Encrypt a Shared Folder

Go to **Main Menu** > **Control Panel** > **Shared Folder** and click **Edit** to encrypt your shared folder.[1] After a folder is encrypted, you can use the **Encryption** drop-down menu to edit the folder.

The AES 256-bit encryption can block off all unauthorized access attempts. Without the encryption key, other people will not be able to use the encrypted data even if they remove the hard drives from your Synology NAS and mount it on their device.

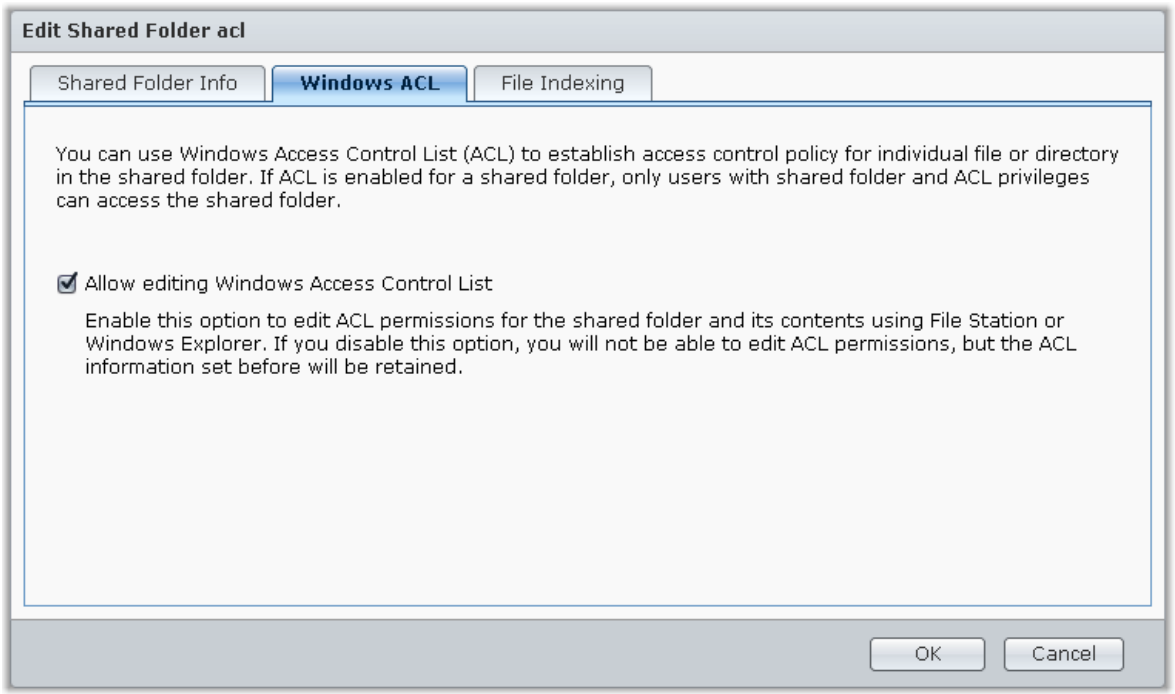
Note: Tick **Mount automatically on startup** to mount the encrypted folder automatically after Synology NAS starts up next time. By default, encrypted shared folder will be unmounted automatically on startup for security reasons. If you reset default passwords with the reset button located on the Synology NAS, encrypted shares will be unmounted, and the option to automatically mount will be disabled.

[1] Shared folder encryption is supported on specific models only.

Define Windows ACL Privileges for Shared Folder

Go to **Main Menu** > **Control Panel** > **Shared Folder** to define ACL privileges for a shared folder. Windows Access Control List (ACL) is a list of privileges or permissions that determine specific access rights under the Windows environment. This can help administrator define access control rules for an individual file or a directory, and give different access rights for individual user or group.

Through Windows ACL, you can assign different privileges to local and domain users in the system. The privileges apply to all file-related applications, such as FTP, File Station, NFS, AFP, WebDAV, etc.


Edit Shared Folder acl
Shared Folder Info
Windows ACL
File Indexing
You can use Windows Access Control List (ACL) to establish access control policy for individual file or directory in the shared folder. If ACL is enabled for a shared folder, only users with shared folder and ACL privileges can access the shared folder.
Allow editing Windows Access Control List
Enable this option to edit ACL permissions for the shared folder and its contents using File Station or Windows Explorer. If you disable this option, you will not be able to edit ACL permissions, but the ACL information set before will be retained.
OK
Cancel

Index Shared Folder Contents

Go to the **File Indexing** tab to enabled file indexing. This option indexes the contents of a shared folder so you can find files or folders more quickly during file search.

> ***Note:*** See "Search for Files or Folders" for more information about searching files with File Station.

Chapter 9

Access Files from Anywhere

When you have set up users or groups with proper access privileges to the shared folders, they can share their files with your Synology NAS from anywhere.

This chapter explains the ways to access the Synology NAS shared folders within the local network or over the Internet. For more detailed instructions, please see **DSM Help**.

Access Files within the Local Network

This section explains how to allow users to use Windows, Mac, or Linux computer to access shared folders on Synology NAS within the local network.

> ***Note:*** Before accessing, make sure the relative file sharing protocols have been enabled for your Synology NAS. See "Enable File Sharing Protocols for All Platforms" for more information.

Access Shared Folders from Windows

To access shared folders from Windows, you can use any of the following methods.

Method 1: Use Synology Assistant to map the shared folders as network drives.

Run Synology Assistant (available at Synology's **Download Center**) and select the server from the server list. Click **Map Drive** and follow the onscreen steps to finish the setup.

Upon completion, you can access the mapped shared folder directly in Windows Explorer.

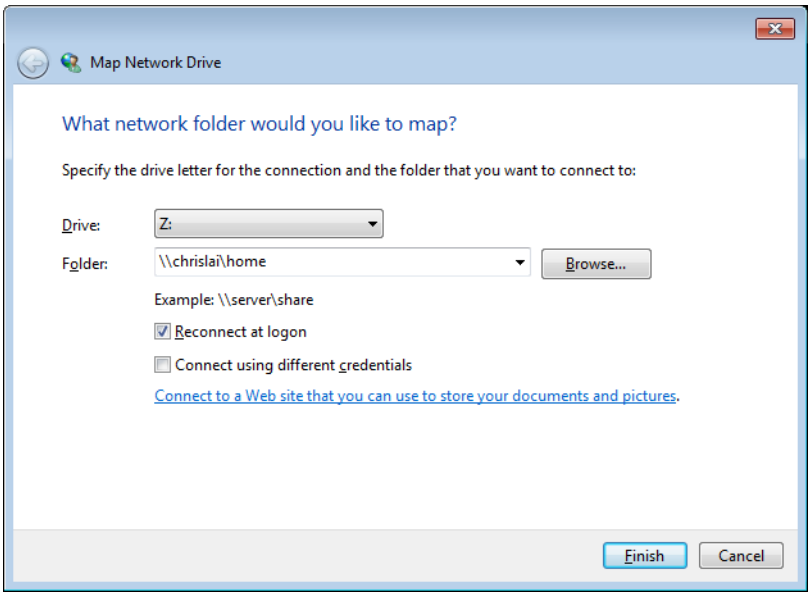
Method 2: Use Windows Explorer.

Open a Windows Explorer window and choose **Tools** > **Map network drive** to show the **Map Network Drive** window. Choose a drive number from the **Drive** drop-down menu.

Locate the shared folder by doing one of the following:

- Enter **\\Synology_Server_Name\Shared_Folder_Name** in the **Folder** field.
- Click **Browse** to locate the shared folder, and then click **OK**.

Enter your user name and password for Synology DiskStation Manager and click **OK**. Upon completion, you can access the mapped shared folder directly in Windows Explorer.

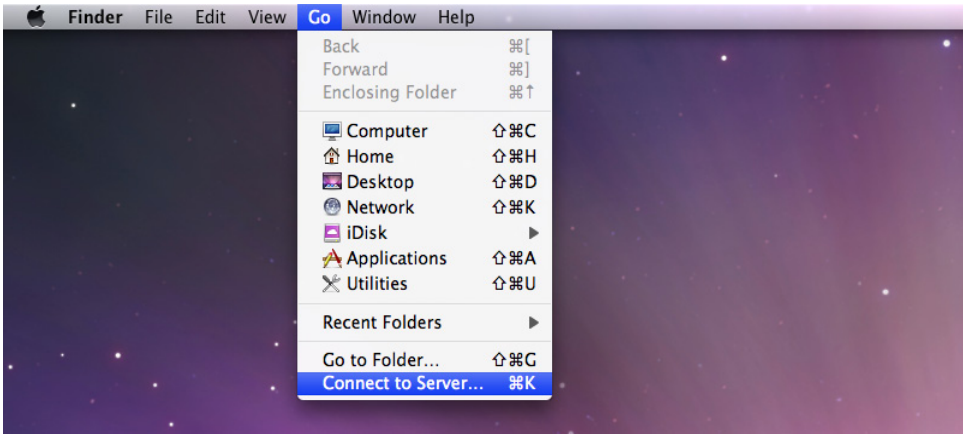

Map Network Drive
What network folder would you like to map?
Specify the drive letter for the connection and the folder that you want to connect to:
Drive:
Z:
Folder:
\\chrislai\home
Browse...
Example: \\server\share
Reconnect at logon
Connect using different credentials
Connect to a Web site that you can use to store your documents and pictures.
Finish
Cancel

Access Shared Folders from Mac

Choose **Go** > **Connect to Server** from the menu bar. Type the IP address or name (appended with **.local**) of the Synology NAS preceded by **smb://** or **afp://** in the **Server Address** field and click **Connect**. (e.g. **smb://EricaWang.local** or **afp://192.168.0.2**)

> ***Note:*** For better performance, it is recommended that you connect to the shared folders via SMB.

Select the shared folder you want to access. Upon completion, you can access the shared folder in the Finder window.



Access Shared Folders from Linux

In Synology DiskStation Manager, Go to **Main Menu** > **Control Panel** > **Shared Folder**. Select the shared folder you want to access, click **NFS Privileges**, and find the mount path at the bottom of the window that appears.

On a Linux computer, enter the mount path to mount the shared folders.

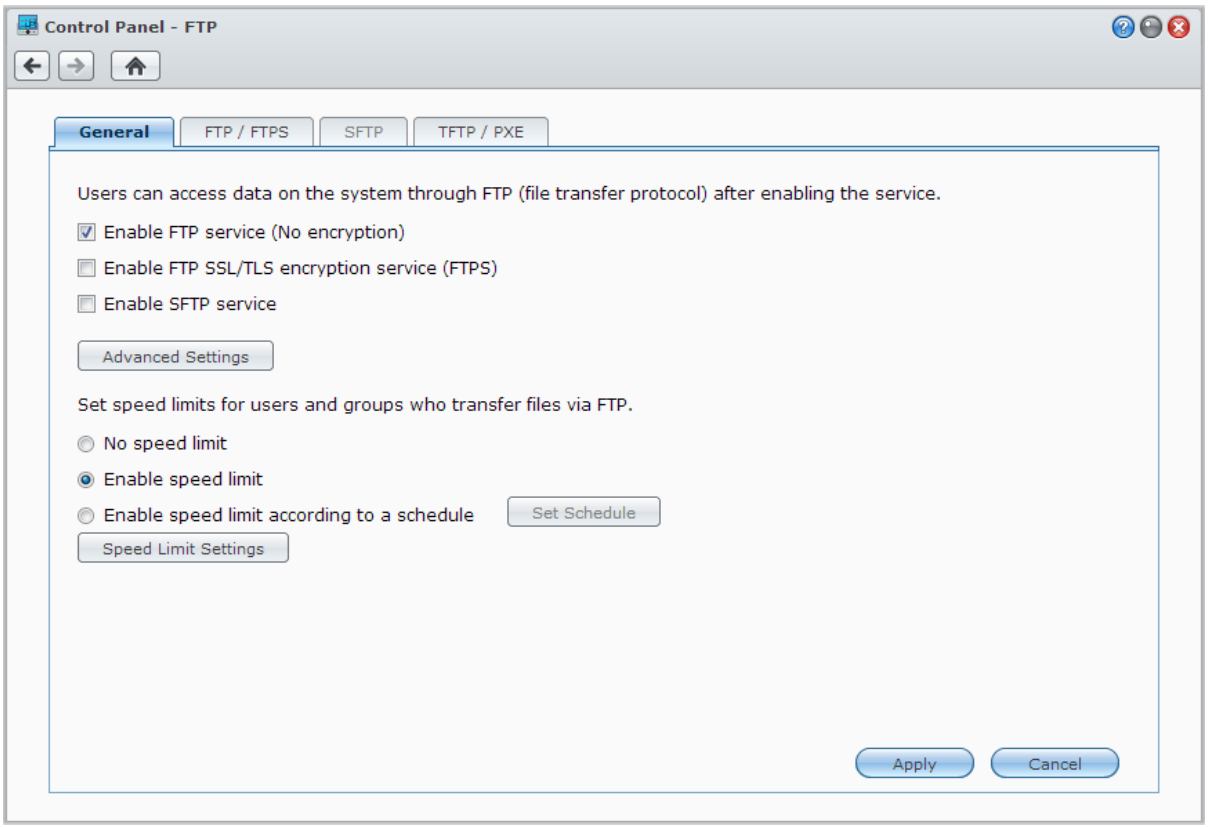
> ***Note:*** For more information about NFS Privileges, see "Allow Users or Groups to Access Shared Folders".

Access Files via FTP

If your Synology NAS is accessible over the Internet, you can use a FTP application to access the shared folders.

> ***Note:*** For more information about making Synology NAS accessible over the Internet, see "Chapter 6: Access your Synology NAS from the Internet".

Go to **Main Menu** > **Control Panel** > **FTP** to enable FTP service, allowing users to upload or download Synology NAS data via FTP.


Control Panel - FTP
General
FTP / FTPS
SFTP
TFTP / PXE
Users can access data on the system through FTP (file transfer protocol) after enabling the service.
Enable FTP service (No encryption)
Enable FTP SSL/TLS encryption service (FTPS)
Enable SFTP service
Advanced Settings
Set speed limits for users and groups who transfer files via FTP.
No speed limit
Enable speed limit
Enable speed limit according to a schedule
Set Schedule
Speed Limit Settings
Apply
Cancel

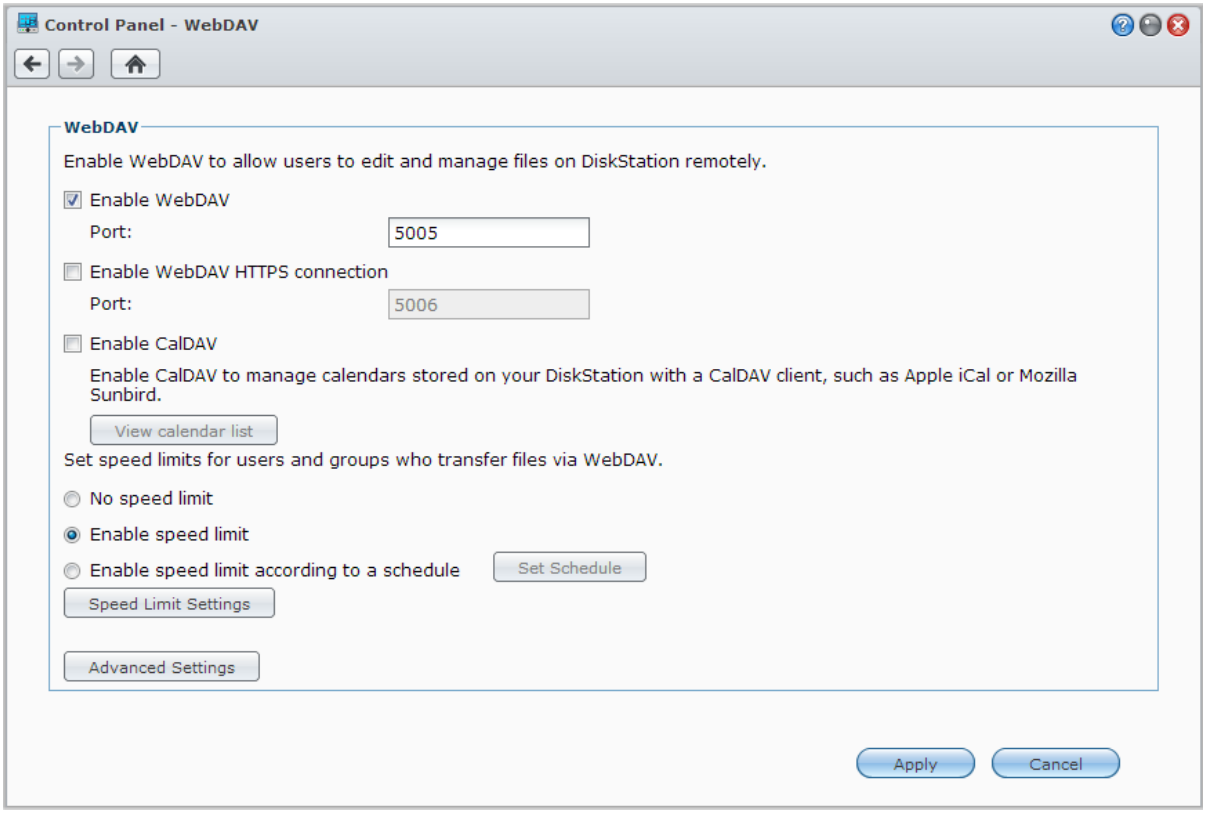
Connect to Synology NAS Using a FTP Application

Open any FTP application on your computer and enter the following information to connect to Synology NAS:

- IP address or domain name of the Synology NAS
- Your user account and password
- The port number (The default number is 21)

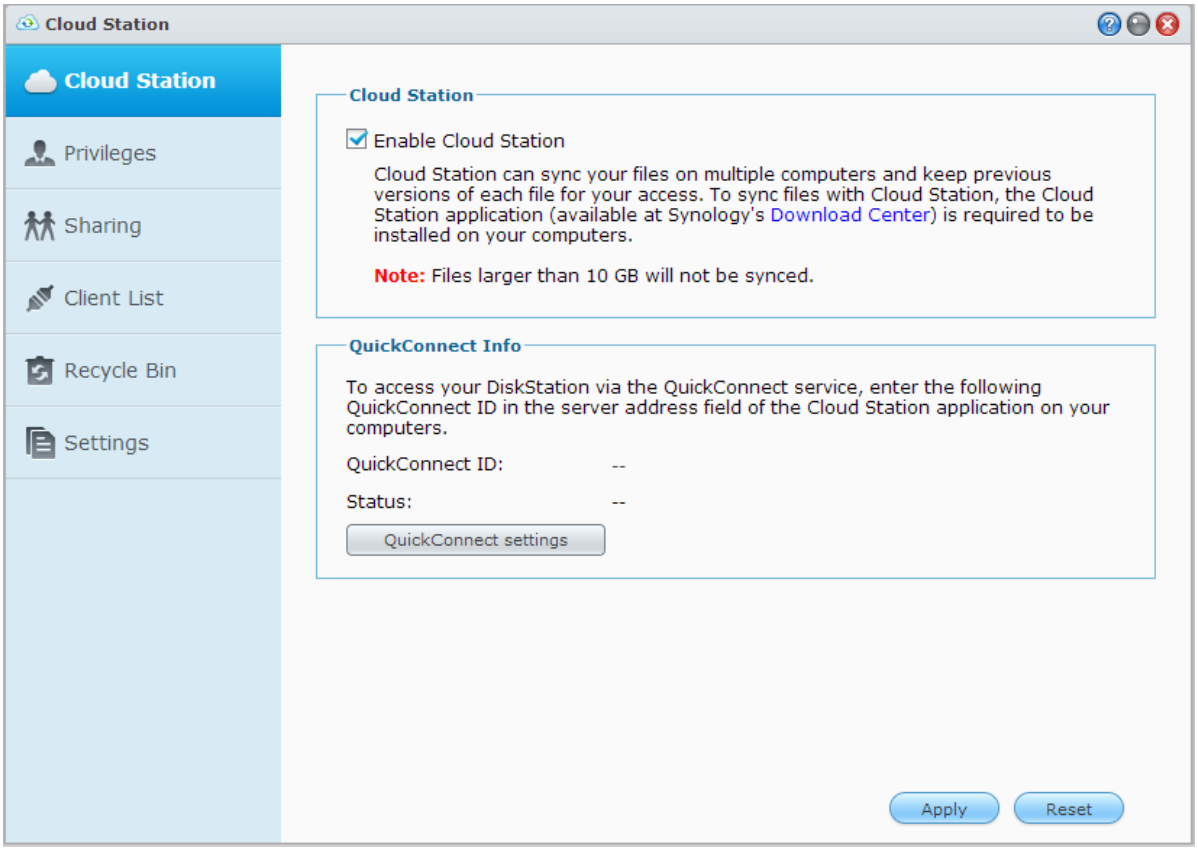
Access Files via WebDAV

By enabling WebDAV or CalDAV (at **Main Menu** > **Control Panel** > **WebDAV**), you can remotely manage and edit files or calendars stored on the Synology NAS.


Control Panel - WebDAV
WebDAV
Enable WebDAV to allow users to edit and manage files on DiskStation remotely.
Enable WebDAV
Port:
5005
Enable WebDAV HTTPS connection
Port:
5006
Enable CalDAV
Enable CalDAV to manage calendars stored on your DiskStation with a CalDAV client, such as Apple iCal or Mozilla Sunbird.
View calendar list
Set speed limits for users and groups who transfer files via WebDAV.
No speed limit
Enable speed limit
Enable speed limit according to a schedule
Set Schedule
Speed Limit Settings
Advanced Settings
Apply
Cancel

Sync Files via Cloud Station

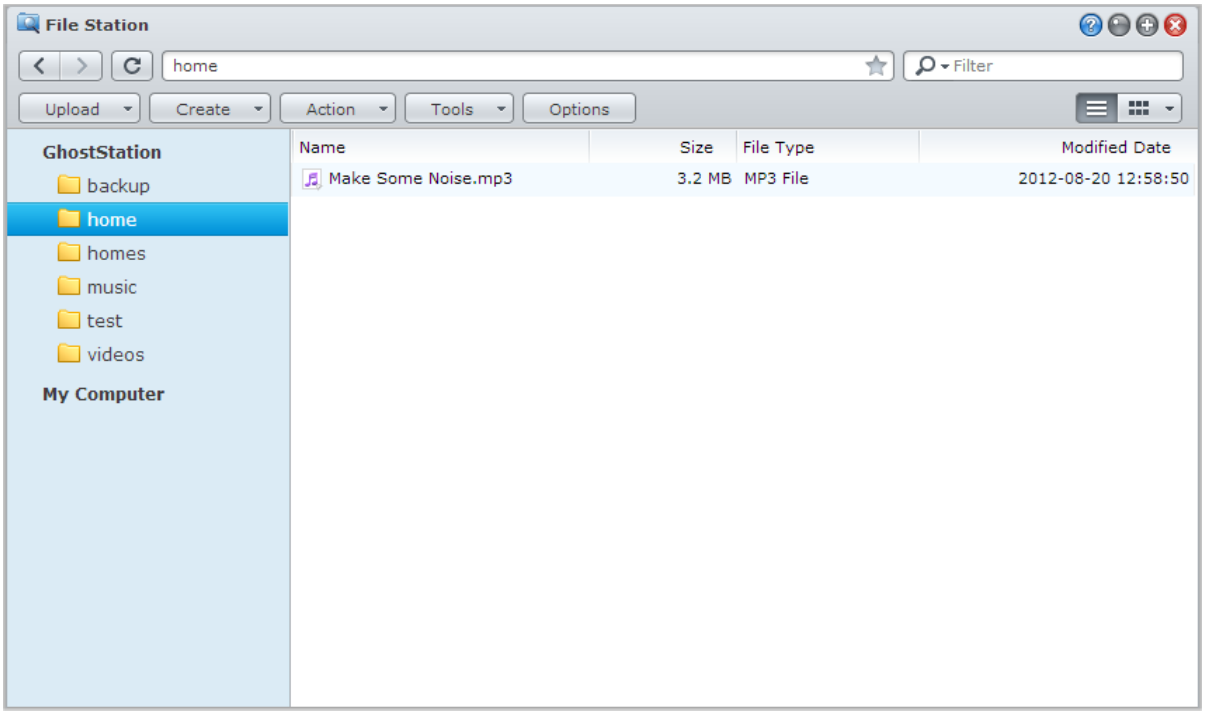
Cloud Station is a file sharing service that allows your Synology NAS to become a file sync center to sync files between multiple client computers. Go to **Main Menu** > **Package Center** to install and run the Cloud Station package.


Cloud Station
Cloud Station
Privileges
Sharing
Client List
Recycle Bin
Settings
Cloud Station
Enable Cloud Station
Cloud Station can sync your files on multiple computers and keep previous versions of each file for your access. To sync files with Cloud Station, the Cloud Station application (available at Synology's Download Center) is required to be installed on your computers.
Note: Files larger than 10 GB will not be synced.
QuickConnect Info
To access your DiskStation via the QuickConnect service, enter the following QuickConnect ID in the server address field of the Cloud Station application on your computers.
QuickConnect ID: --
Status: --
QuickConnect settings
Apply
Reset

Note: A client application (Cloud Station for computer clients, available at Synology's **Download Center**) is required to be installed on client computers before syncing files with the Synology NAS.

Access Files via File Station

File Station is DSM's file management tool, allowing DSM users over the Internet to access the Synology NAS folders with their web browsers. By launching two or more File Stations, you can manage all your Synology NAS data by dragging and dropping them between different File Stations.



File Station Appearance

Go to **Main Menu** > **File Station** to open a **File Station** window.

- **Left panel:** Displays shared folders and their subfolders in the upper part, and the folders on your local computer in the lower part.
- **Main section:** Displays contents of the currently-selected folder.
- **Help button (top-right corner):** Click the **Help** button (with a question mark) to reveal the DSM Help, where you can get useful help about how to use File Station.
- **Search field (next to the Help button):** Enter a keyword to filter through files or folders in the current folder.
- **Advanced Search (magnifying glass button):** Search for refined search results.

Manage File Station Options

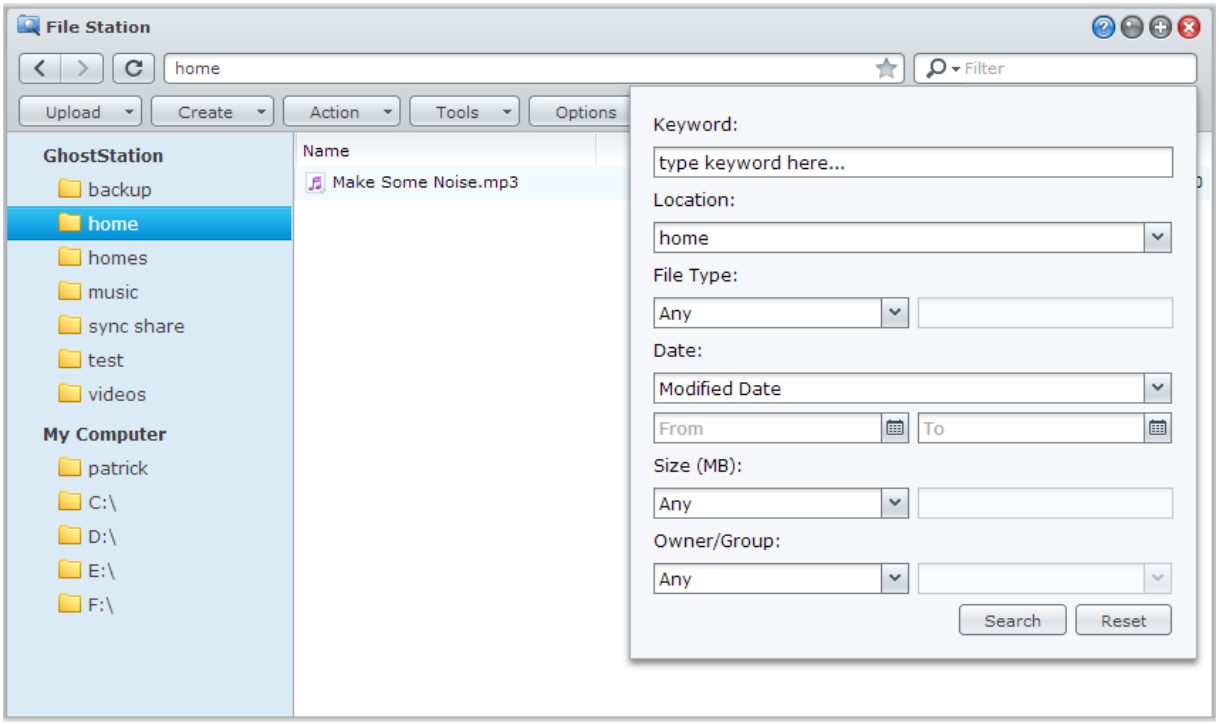
Click **Options** to configure general settings, enable File Station log, mount remote folders or virtual drives, determine who can share file links, and set speed limit to control the bandwidth usage for DSM file transfer services.

Note:

- For more information about remote folders or virtual drives, see "Mount Remote Folders or Virtual Drives".
- For more information about shared links, see "Share File Links".

Search for Files or Folders

You can type keywords in the **Filter** field at the top-right corner of File Station to filter through files or folders in the current folder. Additionally, you can also perform advanced search in the **Advanced Search** panel for more refined search results.



Note: For quicker search result, it is recommended that you index shared folder contents. See "Index Shared Folder Contents" for more information.

Set File Station in Action

With the **Action** menu, right-clicking, and dragging-and-dropping, you can easily download, upload, copy, move, rename, delete, extract, and compress files or folders, and more.

Edit the Properties of Files and Subfolders

You can edit the access privileges to files and subfolders (meaning folders and their subfolders in a shared folder), copy download links and open file in a new browser window in the **Properties** window. Select the files and folders for which you want to set access privileges. Right-click one of the files or folders, or choose the **Action** menu, and then choose **Properties**.

Note:

- To set access privileges to shared folders, please see "Allow Users or Groups to Access Shared Folders" for more information.
- You are not allowed to edit the access privileges to files and subfolders in the **photo** shared folder here. To set access privileges to photo albums for Photo Station users, open Photo Station, go to the **Settings** page, and click the **Help** tab for more information.
- With File Station, you can only perform the upload action for files and folders on your computer. All the other File Station actions and properties setting are available for files and folders on Synology NAS only.

Share File Links

Files or folders stored on your Synology NAS can be shared quickly and easily. Simply right-click a file or folder and select Share file links. This generates a link and QR code, which can be sent to friends or other users. They can follow the link to download the selected file or folder, whether or not they possess a DSM account.

Mount Remote Folders or Virtual Drives

File Station allows you to mount remote folders to access contents shared by network computers or other Synology NAS, or virtual drives to access contents within disc images. That way, you can easily navigate all available network resources or disc images with File Station. For more information about remote folders or virtual drives, click the **Help** button (with a question mark) at the top-right corner, and then go to **File Station** > **Mount Remote Folders** or **Mount Virtual Drives**.

Edit Music Information

With File Station's Music Information Editor, you can view or edit the information of music files. Simply right-click the music files and choose **Edit music information**.

View Documents, Photos, or Videos

With File Station, you can view documents, videos or photos. For more information, click the **Help** button (with a question mark) at the top-right corner, and then go to **File Station** > **Read and Move Files** > **View Documents, Photos, or Videos**.

Edit Photos

With File Station, you can edit photos with web-based editors, such as Pixlr Editor or Pixlr Express. For more information, click the **Help** button (with a question mark) at the top-right corner, and then go to **File Station** > **Read and Move Files** > **Edit Photos**.

Chapter 10

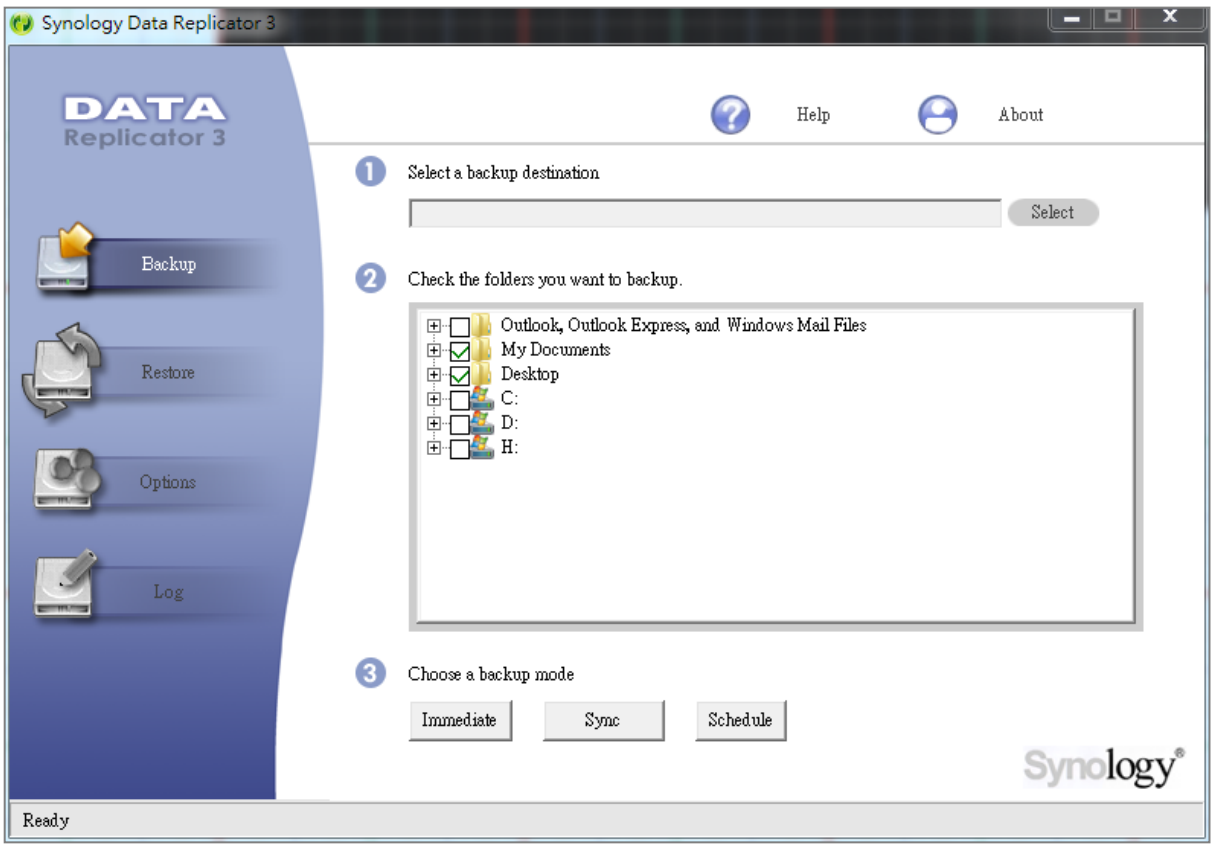
Back Up Data

Synology offers comprehensive backup solutions for your computer and Synology NAS, allowing you to back up data on your computer to Synology NAS. If you are a user belonging to the **administrators** group, you can also back up the Synology NAS data with local or network backup, or sync shared folder contents between Synology NAS. The creative Copy button simplifies external storage devices backup with One-touch design. The support for the Amazon S3 backup service and the innovative Time Backup package give you other choices for server backup.

This chapter explains how the various backup solutions of DSM can help protect your data. For more detailed instructions, please see **DSM Help**.

Back Up Computer Data

Synology-designed Data Replicator 3 allows you to back up data from a Windows computer to Synology NAS. If you are using a Mac or Linux, Synology NAS can also serve as their backup destination.



Use Data Replicator for Windows

The Synology Data Replicator installation package can be found at Synology's Download Center at: http://www.synology.com/support/download.php

What Can Data Replicator Do?

- Monitor specific folders on your Windows computer and perform real-time backup when any modification to the contents within a monitored folder is made.
- Adjust backup versions and restore points.
- Restore backup data from Synology NAS to your Windows computer according to your preference.

Important:

- Your computer and Synology NAS should use the same encoding. See "Language" for more information.
- Synology Data Replicator 3 is the next generation of Synology Data Replicator. It can only restore the data on Synology NAS that was backed up after Data Replicator 3 was installed. If users have backed up data on Synology NAS using Synology Data Replicator, we recommend restoring data on Synology NAS to PC first before using Synology Data Replicator 3.

Data Replicator Requirement:

- **Free HDD Space:** 5MB
- **Operating System:** Windows 2000 or later
- **Best Screen Resolution:** 1024 x 768 or above
- **Network Environment:** Microsoft Networking over TCP/IP enabled and has network connection with Synology NAS

To install Data Replicator:

Unzip the file downloaded from **Download Center**. Find and double-click the setup.exe file, then follow the onscreen instructions.

To use Data Replicator:

For detailed instructions on how to use Data Replicator, see its Help by clicking the **Help** button.

Use Time Machine for Mac

Synology NAS provides compatibility for backup with Apple Time Machine. Mac users can back up their data to the shared folder of the Synology NAS without problem. Go to **Main Menu** > **Control Panel** > **Win/Mac/NFS**, tick **Enable Mac file service**, and choose a shared folder from the **Time Machine** drop-down menu. The chosen shared folder will become Time Machine's backup destination

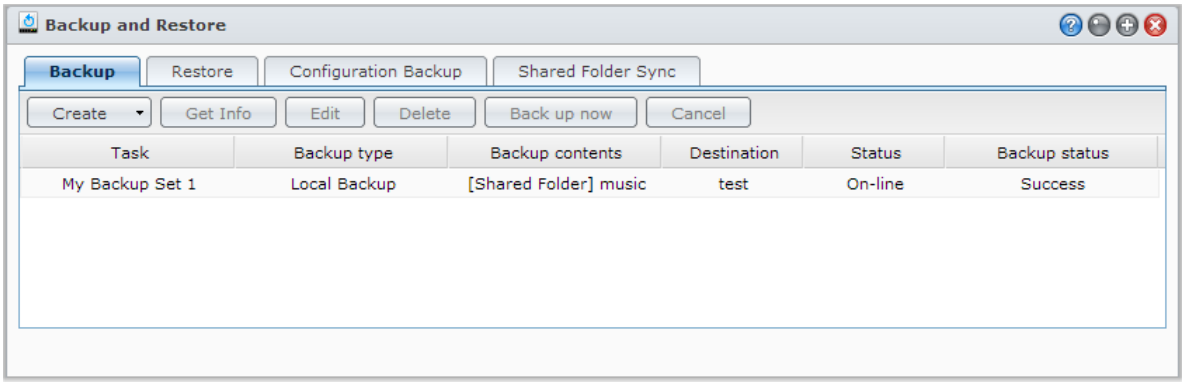
Note: For more information about using Time Machine, see the help on your Mac computer.

Use rsync for Linux

You can use rsync to back up Linux data to the Synology NAS.

Back up Data or iSCSI LUN on Synology NAS

Other than backing up computer data to Synology NAS, users belonging to the **administrators** group can back up data or iSCSI LUN on the Synology NAS.



Ways to Back Up Synology NAS Data

Local Backup and Network Backup are ways you can choose to back up data or iSCSI LUN on your Synology NAS. Plus, Synology NAS also supports Amazon S3 Backup, allowing you to back up data to the Amazon S3 Server. Go to **Main Menu** > **Backup and Restore** > **Create** to take advantage of the below backup methods. For more detailed instructions, please see **DSM Help**.

Local Backup

Local Backup allows backing up data from the Synology NAS to a system shared folder or an external disk via USB or eSATA interface. The backups will be saved in a sub-folder named "LocalBackup" under the destination shared folder.

> ***Note:*** You may need to format the external disk before performing Local Backup to the disk for the first time.

Network Backup

Network Backup allows backing up data from the Synology NAS to another one or an rsync-compatible server. There are two modes available for Network Backup: **non-encrypted** and **encrypted**. Encrypted mode provides better security, while non-encrypted mode provides better performance. To ensure backup efficiency, it is recommended that you choose encrypted backup for important files.

> ***Note:*** For more information about enabling Network Backup Service to set up your Synology NAS as a backup destination, go to **Main Menu** > **Control Panel** > **Network Backup**, and click the **Help** button (with a question mark) at the top-right corner.

Amazon S3 Backup

Amazon S3 Backup allows backing up data from the Synology NAS to an Amazon S3 server. After you perform an Amazon S3 Backup task, a single backup file will be stored in a **Bucket** on Amazon S3 Server, which is identified by a unique **Set KEY Value** that begins with **SourceServerName_MAC address**, and ends with the complete file path of this file.

With Amazon S3 Backup, backing up to Amazon S3 RRS (Reduced Redundancy Storage) is also supported.

> ***Note:***
>
> - There are also encrypted and non-encrypted modes for Amazon S3 Backup.
> - Fees may apply to use the Amazon S3 Backup service.
> - For more information about backing up Synology NAS data, go to **Main Menu** > **Backup and Restore** and click the **Help** button (with a question mark) at the top-right corner.

Perform Backup Tasks on Synology NAS

Go to **Main Menu** > **Backup and Restore** to perform backup tasks on Synology NAS.

Before you start, do the following:

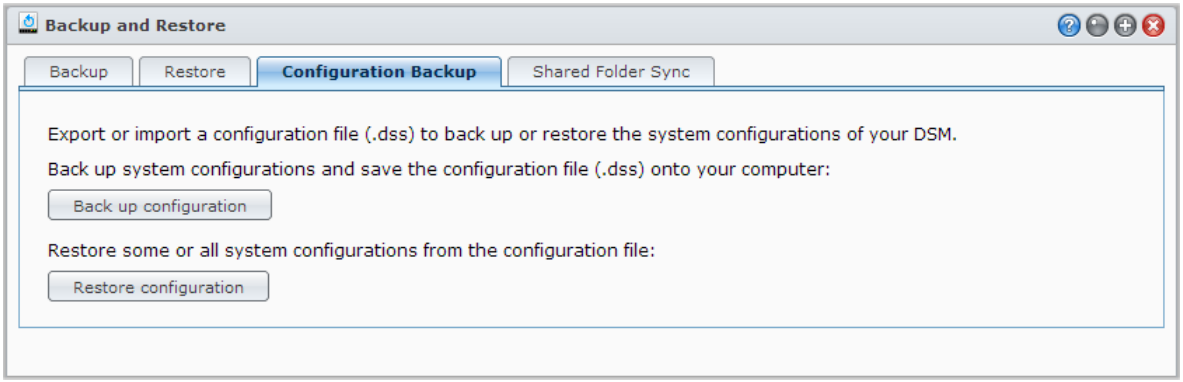
- **For Network Backup to another Synology NAS:** Log in to the DSM of the target Synology NAS, and then go to **Main Menu** > **Control Panel** > **Network Backup** > **Network Backup**. Make sure **Enable network backup service** is ticked and **Use customized rsync configuration** is deselected to make the target Synology NAS available for backup.
- **For Local Backup to external disks:** Go to **Main Menu** > **Control Panel** > **External Devices** and click **Format** to format the external disk.

To perform data or LUN backup or restoration:

For detailed instructions, click the **Help** button at the top-right corner, and then go to **Backup and Restore** > **Backup**.

Backup and Restore System Configurations

Go to **Main Menu** > **Backup and Restore** > **Configuration Backup** to back up and restore the system configurations of your Synology NAS. You can back up system configurations to a configuration file (.dss) and then restore the configurations at a later time.


Backup and Restore
Backup
Restore
Configuration Backup
Shared Folder Sync
Export or import a configuration file (.dss) to back up or restore the system configurations of your DSM.
Back up system configurations and save the configuration file (.dss) onto your computer:
Back up configuration
Restore some or all system configurations from the configuration file:
Restore configuration

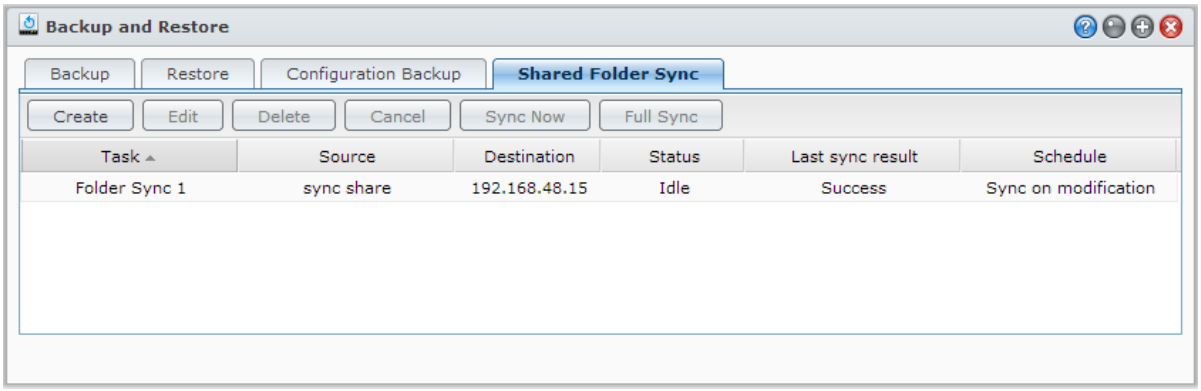
More Information

The configurations that will be backed up include the following:

- Users, Groups, and Shared Folders
- Workgroup, Domain, and LDAP
- File Sharing Services (such as Windows File Service, Mac File Service, NFS Service, FTP, and WebDAV),
- Web Services
- Network Backup Services (such as Network Backup (or Rsync) Service, Shared Folder Sync Service, and Time Backup Service)
- Other Services (such as User Home and Password Strength)

Sync Shared Folder Contents between Synology NAS

Shared Folder Sync allows you to sync shared folder contents from a source Synology NAS (or "client") to a destination Synology NAS (or "server") over the network. Shared Folder Sync backup tasks can be viewed and managed by going to **Main Menu** > **Backup and Restore** > **Shared Folder Sync**. For detailed instructions regarding how to enable Shared Folder Sync, please see **DSM Help**.

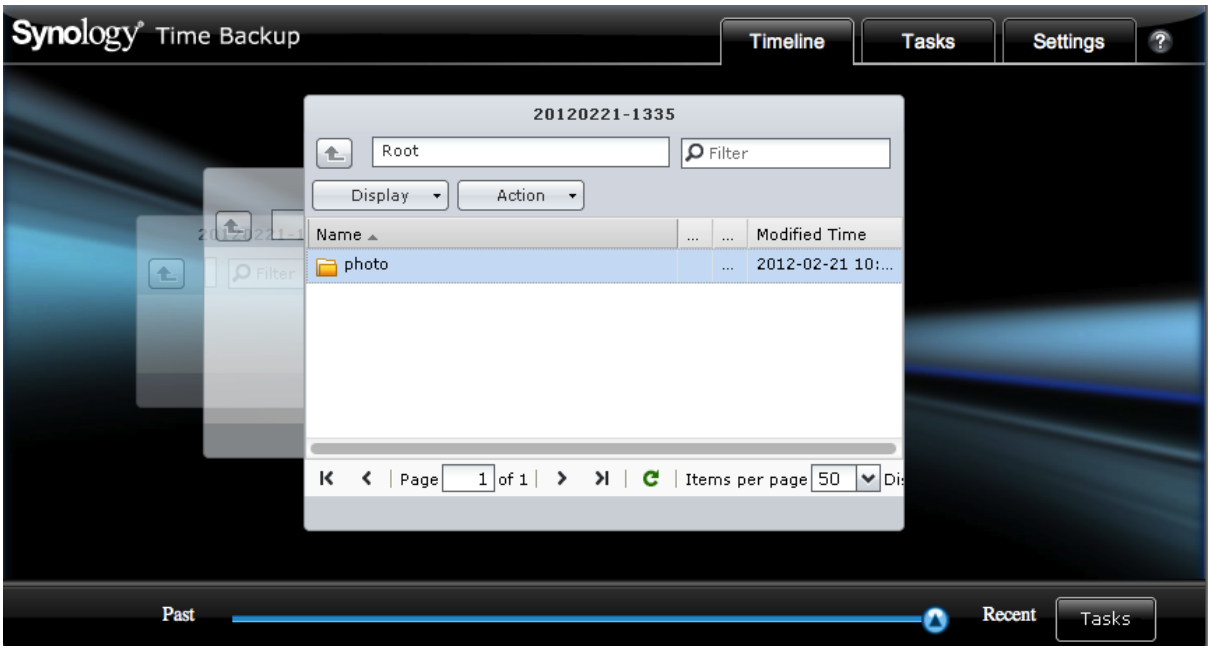


Back up Synology NAS Data with Time Backup

Synology Time Backup is a quick and flexible way to back up and restore shared folders on the Synology NAS. You can back up the data locally onto another volume, or onto an external hard disk. You can set up multiple **tasks** and create more than one **version** for each task.

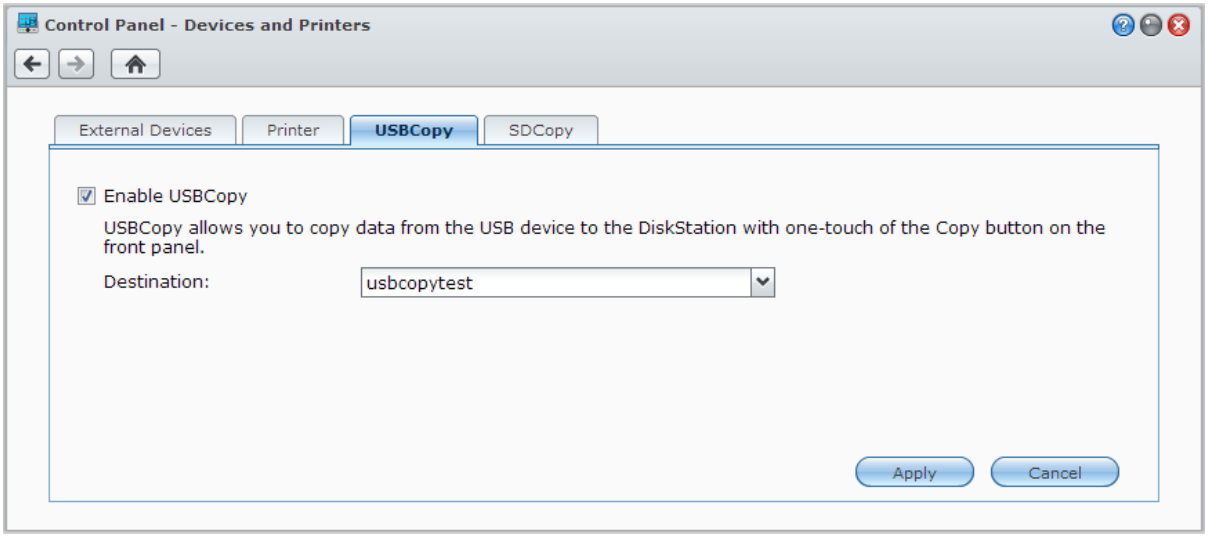
Time Backup features snapshot function. When creating a version, the system will take a **snapshot** and capture the condition of the data within the specified moment. The system will create a version entry within seconds. You can access the newly created version and edit the files you've just backed up with no time delay.

Time Backup can be installed by going to **Main Menu** > **Package Center**.



Back up Data on USB Device or SD Card

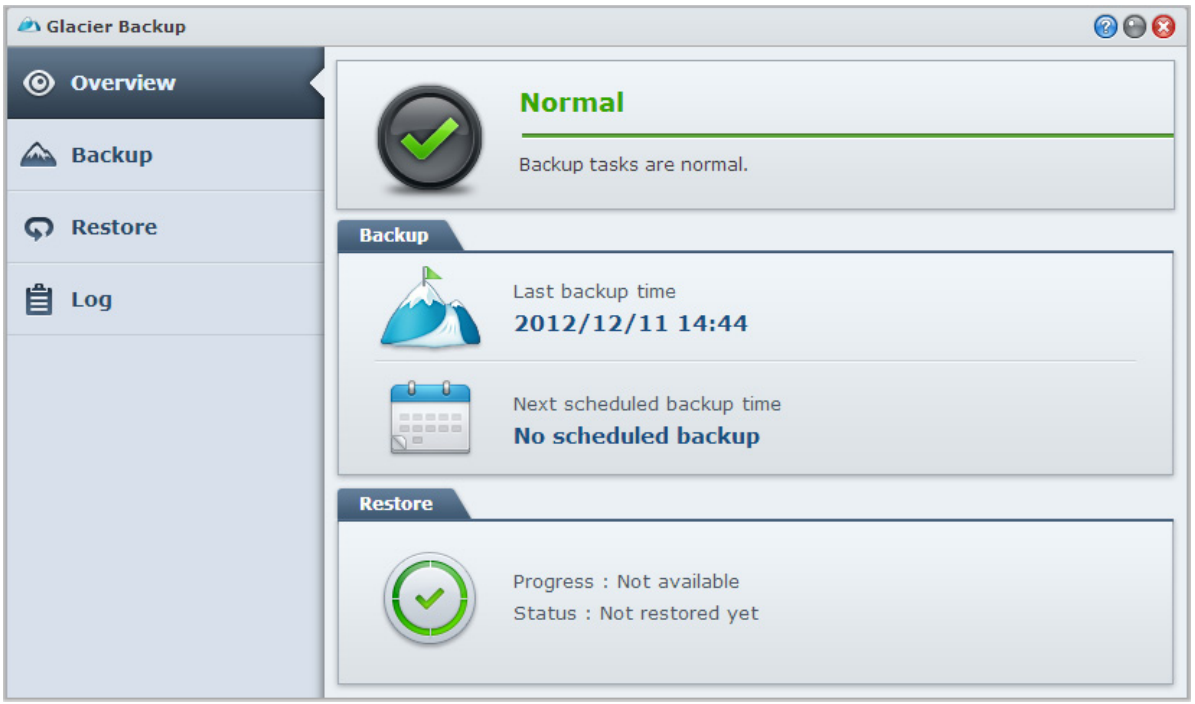
You can go to **Main Menu** > **Control Panel** > **Devices and Printers** to specify a shared folder for use with USBCopy or SDCopy, and then use the **Copy** button on the front panel of your Synology NAS to copy data from a USB device or SD card to the shared folder.[1]



Back up Data to Amazon Glacier

Synology's Glacier Backup is a backup management tool which facilitates backing up data on the Synology NAS to Amazon Glacier, a cloud storage service which provides secure and durable data storage at extremely low costs. By backing up files to your Amazon Glacier account, Glacier Backup helps save space on your Synology NAS and provides a contingency plan to avoid data loss.

Glacier Backup can be installed by going to **Main Menu** > **Package Center**. For more detailed instructions regarding Glacier Backup, please see **DSM Help**.



[1] USBCopy and SDCopy are supported on specific models only. Visit **www.synology.com** for more information.

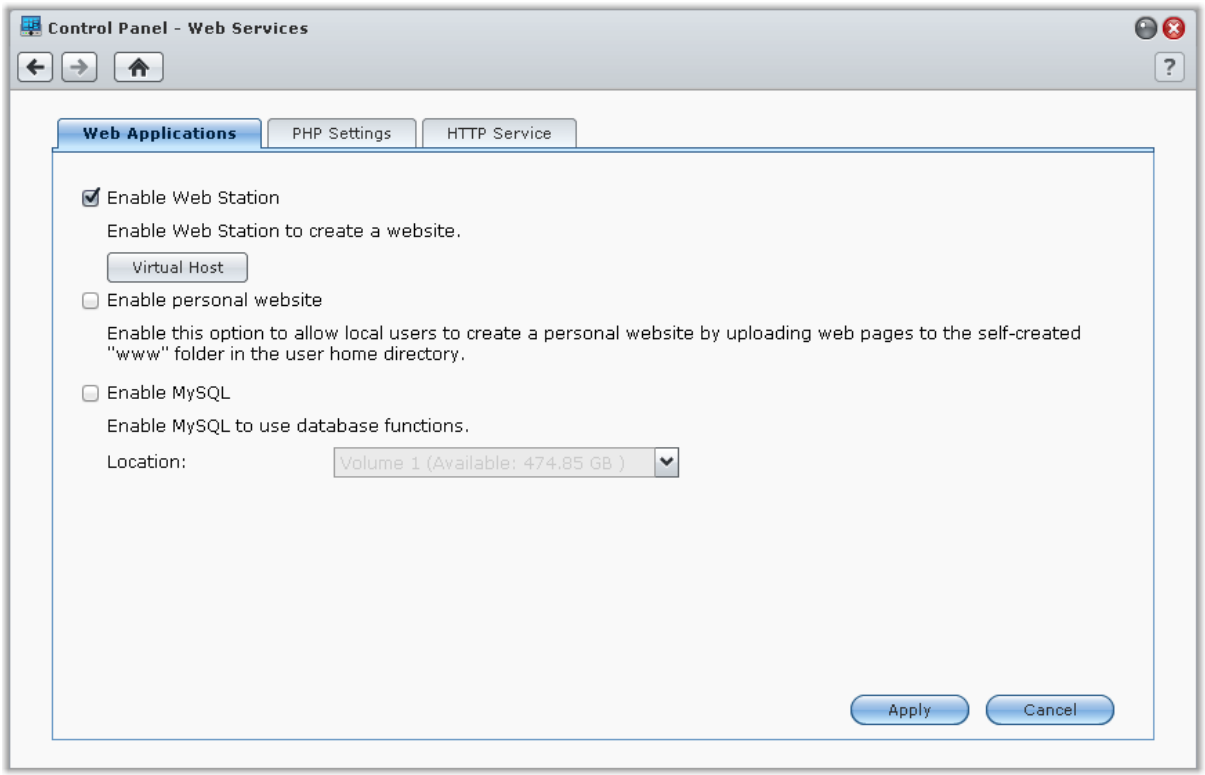
Chapter 11

Host Websites, Email Server, and Print Server

Synology NAS is designed for small and medium businesses (SMB), providing the ability to set up web, email, and print servers on a single Synology NAS without spending extra money. This chapter provides basic information regarding these features. For more detailed instructions, please see **DSM Help**.

Use Web Station to Host Websites

Go to **Main Menu** > **Control Panel** > **Web Services** to set up your website with Web Station, which is integrated with support for PHP and MySQL. For detailed instructions, please see **DSM Help**.


Control Panel - Web Services
Web Applications
PHP Settings
HTTP Service
Enable Web Station
Enable Web Station to create a website.
Virtual Host
Enable personal website
Enable this option to allow local users to create a personal website by uploading web pages to the self-created "www" folder in the user home directory.
Enable MySQL
Enable MySQL to use database functions.
Location:
Volume 1 (Available: 474.85 GB)
Apply
Cancel

Enable Web Station

With the Web Station feature, you can create a website with web pages on the Synology NAS. With built-in PHP and MySQL support, you can create dynamic, database-driven website for your business. There is also a variety of 3rd party packages such as Content Management, Customer Relationship Management & e-Commerce system in Package Center, so that you can install them with a few clicks. The default shared folder, "web" will store the web page files for your website.

Enable Virtual Host to Host Websites

You can host multiple websites on a single server with virtual host feature. Each website can have different port numbers or even different hostnames.

Enable Personal Website

The personal website function is a convenient way to allow Synology NAS users to host their own personal websites. Each local user, domain user and LDAP user will have a unique website address.

Enable MySQL

You can enable MySQL to use the MySQL database function for your website. After MySQL is enabled, you can install the **phpMyAdmin** package available at Synology's **Download Center** to manage the MySQL database.

Manage PHP Settings

After you have enabled Web Station, you can click the **PHP Settings** tab to configure PHP related settings. For more detailed instructions, please see **DSM Help**.

More Information

Install Featured Applications

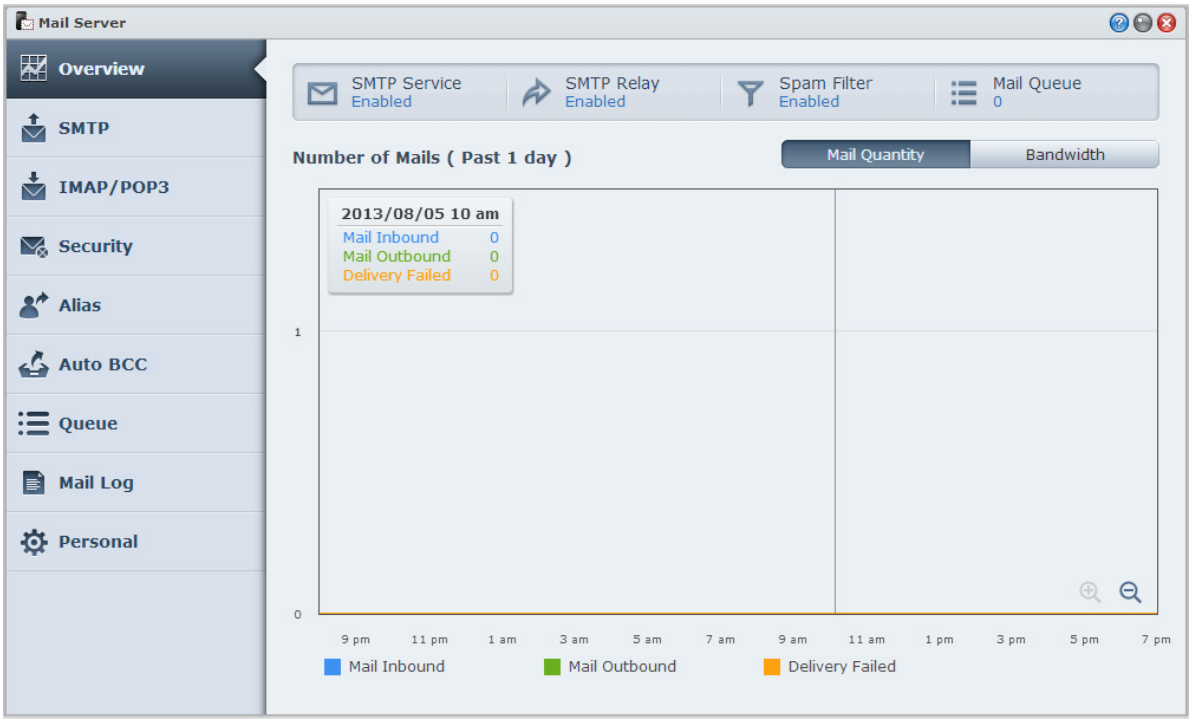
- After you have finished setting up your web environment, you can install applications to enhance the features of your website using many of the free Open Source applications.
- For a list of featured applications tested to be compatible with Synology NAS, visit http://www.synology.com/support/faq_show.php?q_id=404. For the download links and installation instructions of those applications, visit their official websites.

Modify HTTP Service Options

Click the **HTTP Service** tab at **Control Panel** > **Web Services**. In addition to the default port number 80, you can add another port for the use of Photo Station and Web Station. For more detailed instructions, please see **DSM Help**.

Host Mail Server

You can turn your Synology NAS into a mail server, allowing Synology NAS users to receive and deliver mail messages using their mail client programs.



Before you start

Register a domain name for your IP address, or apply for a DDNS hostname.

> ***Note:*** For more information about registering a DDNS account for Synology NAS, see "Register DDNS for the Synology NAS."

- When applying for a domain name or dynamic domain name, please fill the MX (Mail eXchanger) record of mail domain with your mail server (that is the FQDN of Synology NAS).

  For example, if the mail server is **mail.synology.com**, then fill the MX record with **mail.synology.com**.
- Go to **Main Menu** > **Control Panel** > **User** and enable **User Home** service to allow users to store their mail messages in their home folders. Otherwise, they will not be able to send or receive mails.

  > ***Note:*** For more information about User Home, see "Create User's Home Folder."

Confirm the port forwarding settings:

You should follow the table below to setup port forwarding if NAT is required.

Protocols	SMTP	POP3	IMAP	IMAPS	POP3S
Port	25	110	143	993	995
Note	IMAPS: IMAP over SSL/TLS POP3S: POP3 over SSL/TLS				

Set up Mail Server

Go to **Main Menu** > **Package Center** to install and run the Mail Server package. For more detailed instructions regarding Mail Server, please see **DSM Help**.

Install Mail Station to Enable Webmail Service

With the Mail Station package up and running, Synology NAS users can send and receive mails via DSM's webmail service.

To install and run Mail Station:

Go to **Main Menu** > **Package Center** to install and run the Mail Station package.

> ***Note:*** For more information about installing packages for Synology DiskStation Manager, see "Chapter 12: Discover Various Applications with Package Center."

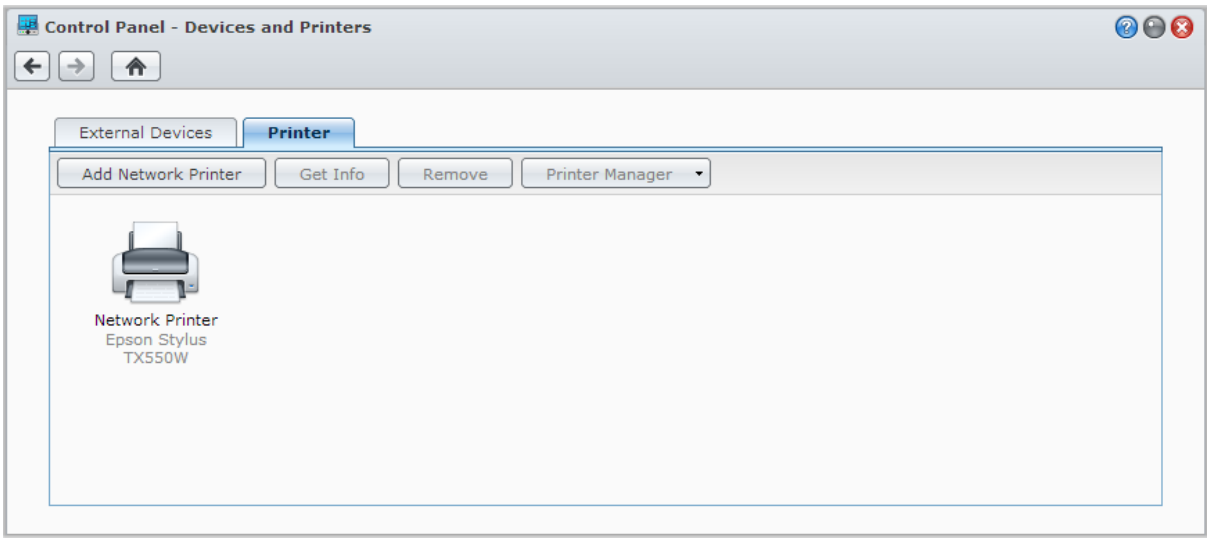
To connect to Mail Station:

Type the following web address in the address bar of your web browser, and then press Enter on your keyboard:
http://Synology_Server_IP_Address/mail/

> ***Note:*** For more information about using the webmail service, see **Mail Station 2 User's Guide** from Synology's Download Center at: http://www.synology.com/support/download.php

Set Synology NAS as Print Server

Go to **Main Menu** > **Control Panel** > **Devices and Printers** > **Printer** to set the Synology NAS as a print server over your local area network, allowing client computers or mobile devices to access printers connected to the Synology NAS. The Synology NAS can connect to USB printers or network printers. In addition, AirPrint support allows you to print from an iOS device, and Google Cloud Print support allows you to print using Google products and services.[1] For more detailed instructions, please see **DSM Help**.



Note: One Synology NAS can be connected by up to 2 USB printers.

Set up Computer to Access Print Server

After the print server is set up on your Synology NAS, Windows, Mac, and Linux clients within the local area network can connect to the print server and access its print/fax/scan service.

Access Print Server with iOS Devices

If you have enabled DSM's AirPrint support, any iOS devices running on iOS 4.2 or later can print to the printer connected to your Synology NAS.[1]

[1] For recommended peripheral models, including hard drive, USB printer, DMA, and UPS, please visit **www.synology.com**.

Chapter 12

Discover Various Applications with Package Center

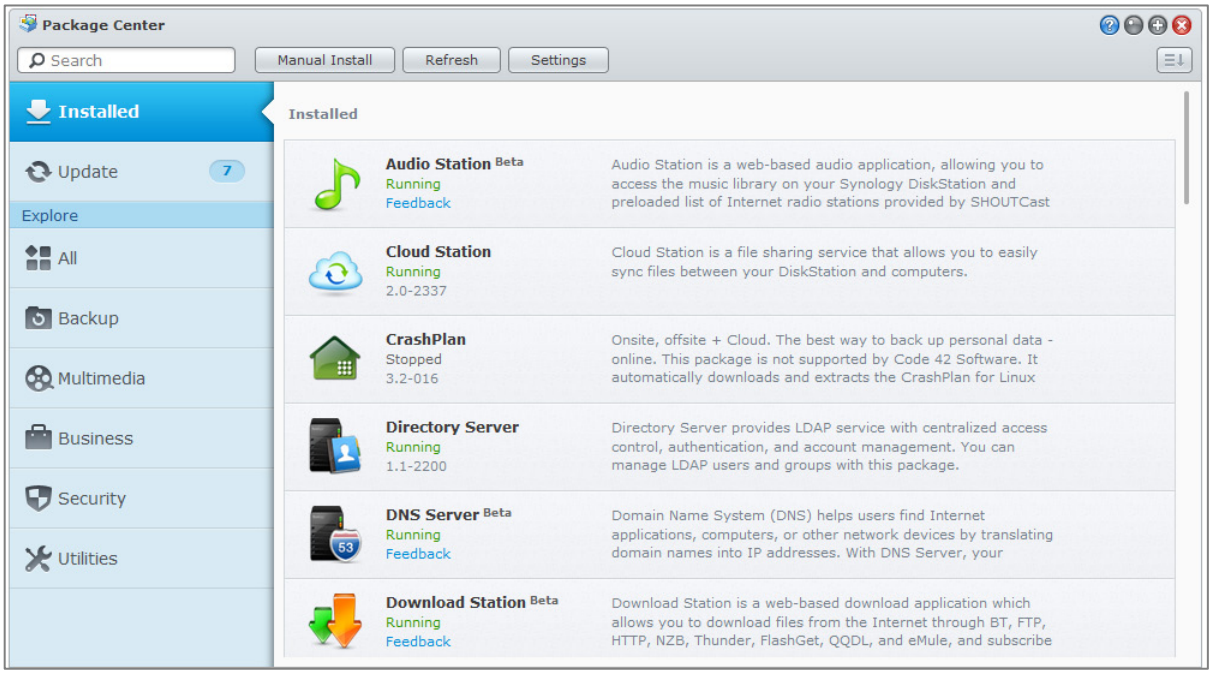
Synology has integrated third party or Synology-designed applications into packages that can be installed on Synology NAS and managed with Package Center.

Coming with full-featured applications, Synology NAS provides you with a variety of privileges to enjoy multimedia contents, share photos, videos, and blogs, access files anytime and anywhere, monitor live actions from cameras, live stream and record digital TV programs, search and download files from the Internet, back up precious data, and build your own cloud.

This chapter introduces packages available at Package Center and how to install packages. For more detailed instructions, please see **DSM Help**.

What Package Center Offers

Go to **Main Menu** >**Package Center** to find out what Package Center has to offer.


Package Center
Search
Manual Install
Refresh
Settings
Installed
Update 7
Explore
All
Backup
Multimedia
Business
Security
Utilities
Installed
Audio Station Beta
Running
Feedback
Audio Station is a web-based audio application, allowing you to access the music library on your Synology DiskStation and preloaded list of Internet radio stations provided by SHOUTCast
Cloud Station
Running
2.0-2337
Cloud Station is a file sharing service that allows you to easily sync files between your DiskStation and computers.
CrashPlan
Stopped
3.2-016
Onsite, offsite + Cloud. The best way to back up personal data - online. This package is not supported by Code 42 Software. It automatically downloads and extracts the CrashPlan for Linux
Directory Server
Running
1.1-2200
Directory Server provides LDAP service with centralized access control, authentication, and account management. You can manage LDAP users and groups with this package.
DNS Server Beta
Running
Feedback
Domain Name System (DNS) helps users find Internet applications, computers, or other network devices by translating domain names into IP addresses. With DNS Server, your
Download Station Beta
Running
Feedback
Download Station is a web-based download application which allows you to download files from the Internet through BT, FTP, HTTP, NZB, Thunder, FlashGet, QQDL, and eMule, and subscribe

Install or Buy Packages

On the left panel, you will see a group of package categories listed under **Explore**. Choose any category to view the complete collection of packages classified under this category. Click **Install**, **Try** or **Buy**, and follow the onscreen instructions to install packages. You can also click **Manual Install** and follow the wizard to install a package by uploading **.spk** file (available at Synology's **Download Center** or third party websites).

Chapter 13

Share Photos, Videos, and Blogs with Photo Station

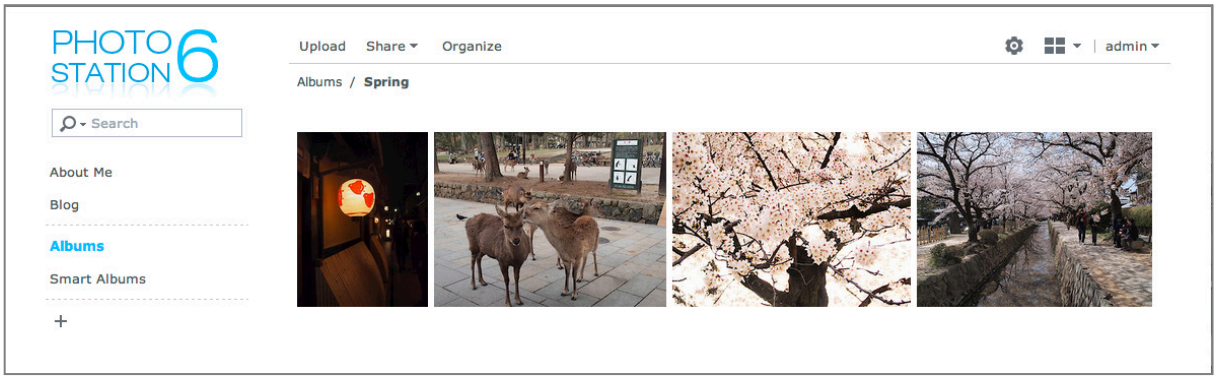
Photo Station is an online photo album integrated with a blog for you to easily share photos, videos, and blog posts over the Internet. With Photo Station, you can upload, organize, edit, and share your photos in quick, easy steps.

Moreover, you can download DS photo+ from Apple's App Store, Android Market, or Windows Marketplace to browse photos and watch videos saved on your Synology NAS with your iOS/Android devices or Windows Phone on the go. For more information about DS photo+, see "Chapter 22: Communicate with Mobile Devices".

This chapter provides a brief overview of Photo Station's features. For more detailed instructions, please see **DSM Help**, or go to the **Settings** page and click the **Help** tab in Photo Station.

Install Photo Station

Go to **Main Menu** > **Package Center** to install Photo Station owned by DSM users belonging to the **administrators** group. Once Photo Station is installed, the **photo** shared folder will be created automatically to contain Photo Station data.



Support and Limitations

- **Supported image formats:** BMP, JPEG, GIF, RAW (arw, srf, sr2, dcr, k25, kdc, cr2, crw, nef, mrw, ptx, pef, raf, raw, 3fr, erf, mef, mos, orf, rw2, dng, x3f), TIFF, PNG
- **Supported video formats:** 3G2, 3GP, ASF, AVI, DAT, DivX, FLV, M4V, MOV, MP4, MPEG, MPG, MTS, M2TS, M2T QT, WMV, XviD, RM[1], RMVB[1], VOB[1]
- **Browser requirement:** JavaScript enabled
- **Microsoft Internet Explorer requirement:** ActiveX controls and plug-ins and Active scripting enabled
- **Upload limit:** You may upload up to 100 files or a total size of 2GB at a time. Files to be uploaded with drag-and-drop must be less than 1GB each.

[1]Users can download files of the specified formats, but cannot play them in Photo Station as a compressed Flash video.

Enable Personal Photo Station

Users belonging to the **administrators** group (if Photo Station's account system is set as **DSM accounts**) can enable Personal Photo Station service to allow all DSM users to have their own Personal Photo Station.

To enable Personal Photo Station, you need to enable the following services first:

- Enable user home service (Go to **Main Menu** > **Control Panel** > **User** > **User Home**). See "Create User's Home Folder" for more information.)
- Enable Personal Photo Station service in Photo Station (Go to **Settings** > **General** > **Personal Photo Station**)
- Enable Personal Photo Station in DSM (Go to **Options** > **Photo Station**). See “Manage Personal Options” for more information.

Photo Station Features

Once properly installed and configured, Photo Station provides the below features. For more detailed instructions regarding these and other features, please see **DSM Help**, or click **Help** from the drop-down menu in the top right corner in Photo Station.

Manage User Accounts and Groups

When Photo Station or Personal Photo Station is enabled by DSM **administrators** or DSM users, they become their Photo Station’s administrator, who can choose to integrate DSM user accounts into Photo Station, or manage independent user accounts. To choose an account system for Photo Station, go to **Settings** > **General** > **User Accounts**.

After choosing the account system, Photo Station administrators can go to **Settings** > **User Accounts** to create, edit, or delete user accounts. In addition, users can be organized into groups for easier management at **Settings** > **Groups**.

Create Albums and Smart Albums

Albums

Users belonging to the **administrators** group can create albums and upload photos via various methods, manage albums with different functions, and view uploaded files with quality thumbnail for better browsing experience. Click **Help** from the drop-down menu in the top right corner for more information.

Smart Albums

Smart Albums are special albums that automatically group photos or videos that match specific criteria. To create a Smart Album, navigate to **Smart Albums** and click **Create**.

Manage Tags for Photos

You can tag your photos with people, locations, and general descriptions to find, view and edit tagged items with ease. To tag photos and videos, simply click the item to which you want to add tags.

To manage existing tags, go to **Settings** > **Photos** and click **Manage Tags**.

Organize Albums into Categories

You can create categories to group related albums together. For example, you can create an album category called "Travel" to collect albums that contain photos of your different trips. Click **+** in the left panel to create a new category, and then select and pin albums to that category.

Share with Social Networks

When you browse your albums, you can share links and upload photos from Photo Station to your social network accounts. To manage settings related to social networks, go to **Settings** > **General**.

Browse Photos and Videos in Different Modes

Navigate to **Albums**, and click the view control icon to switch between view modes and change the way albums are sorted. For example, in timeline mode, you can scroll through an intuitive timeline to quickly find photos or videos of a specific period of time.

Perform Face Recognition

By enabling face recognition function, you can not only configure Photo Station to detect faces and perform auto recognition, but also identify faces yourselves manually. Without enabling the face recognition function, you are not allowed to configure Photo Station to auto recognize faces for you. To enable the function, go to **Settings** > **Photos** > **Face Recognition**.

Use the Blog

If you are a Photo Station administrator, you can sign in to enable, manage and back up your personal blog. Moreover, you can also personalize your blog space by adjusting its settings and layout.

The blog function needs to be enabled at **Settings** > **Blog** before you can post articles on your blog. To manage the blog, go to **Blog**.

Chapter 14

Play Music with Audio Station

Audio Station is a web-based audio application, allowing you to access the music library on your Synology NAS, choose available audio sources on the local area network, and add your favorite music to playlists for playback. You can also browse and play songs on the DLNA-certified Digital Media Servers, and listen to Internet radio.

Audio Station can play music with live lyrics display through USB or Bluetooth speakers connected to your Synology NAS, on your computer, DLNA-certified Digital Media Renderers, iOS/Android devices, Windows Phone, AirPlay compatible devices[1], or external speakers or home stereo equipment connected to the audio dock of Synology Remote (sold separately).

You can download DS audio from Apple's App Store, Android Market, or Windows Marketplace to play the music in Audio Station with your iOS/Android device or Windows Phone. For more information about DS audio, see "Chapter 22: Communicate with Mobile Devices".

This chapter provides a brief overview of Audio Station's features. For more detailed instructions, please see **DSM Help**.

Install Audio Station

Go to **Main Menu** > **Package Center** to install Audio Station. Once Audio Station is installed, the **music** shared folder will be created automatically to contain music you want to share on Audio Station.

[1]AirPlay is supported on specific models only. Visit www.synology.com for more information.

Manage Audio Station Settings

Users belonging to the **administrators** group need to do the following before enjoying music or allowing users to listen to music on Audio Station:

- **Enable personal music library**: You can enable personal library to allow Synology NAS users to have their own personal music library. Once users' personal library is enabled, they can choose to browse and play either their own personal music or both shared and personal music. To enable personal music library, click **Settings** > **Personal Library**.
- **Enable optional settings**: You can enable related settings to allow Synology NAS users to download songs, enjoy high-quality audio output, record diagnostic log, or restrict users from accessing DLNA devices listed under **Media Server**.
- **Assign access privileges**: Users can access the following only when their privileges are granted by users belonging to the **administrators** group. To assign privileges, click **Settings** > **Privileges**.
  - **USB/DLNA Renderer**: Users with this privilege can play music through USB devices or DLNA renderers.
  - **DLNA Browsing**: Users with this privilege can play media server contents.
  - **Manage Playlist**: Users with the privilege can edit or add shared playlists.
  - **Edit Music Tag**: Users with thisprivilege can edit music information.
- **Manage lyrics plugins**: Users can search lyrics from the Internet when lyrics plugins added to Audio Station are enabled by users belonging to the **administrators** group. To enable lyrics plugins, click **Settings** > **Lyrics Plugins**.
- **Manage transcoder**[1]: You can manage transcoder to allow Audio Station to support more audio formats under streaming mode. To manage transcoder, click **Settings** > **Transcoder**.

Audio Station Features

Once properly installed and setup, Audio Station provides the below features. For more detailed instructions regarding these and other features, please see **DSM Help**.

Choose Audio Source

You can choose below audio sources shown on the left panel to play its contents at the bottom of Audio Station or with the mini player.

- **Library**: The library contains music in the **music** shared folders or any other indexed folders of your Synology NAS, which will be organized into the categories shown in the main area of Audio Station.
- **Playlist**: You can organize your songs into playlists to categorize and access your favorite music more easily. There are three types of playlists: **Personal playlist** (viewable by the Synology NAS user who creates the playlist), **shared playlist** (viewable by all Synology NAS users with access to Audio Station), and **smart playlist** (in which songs are exclusively selected based on specific rules). Smart playlists can also be edited at **Main Menu** > **iTunes Server**.
- **Internet Radio**: Audio Station comes with lists of Internet radio stations provided by SHOUTCast(TM) and RadioIO. You can also create your own radio lists or add radio stations to your favorites for quick access. Click **Internet Radio** > **Create** to create new radio stations or right-click the radio stations to add them to the pre-defined lists.
- **Media Server**: Audio Station can browse and play media contents on DLNA-certified Digital Media Servers or other Synology NAS on the local area network. Click **Media Server** to see media servers and Synology NAS found in the local area network.

Change Browsing Views

By clicking the three buttons on the right side of the control bar, you can browse your songs or media contents in three different views: **List**, **Artwork**, **Playing Queue**.

---

[1]The transcoder options are available on specific models only.

Edit Music Information

You can view and edit the information of music files and song lyrics. To view and edit music information or song lyrics, right-click a music file and choose **Song information**.

Choose Output Devices

You can select your desired output device from the **My computer**/**USB speakers**/**[Media renderer name]** (indicating the device you have been streaming music to) drop-down menu on the control bar, and add songs to individual devices to play music via different devices. The output devices include the following:

- **My computer**: Stream music to your computer for playback via the speakers of your computer.
- **USB speakers**: Play music via the USB speakers connected to the USB port of your Synology NAS, or via external speakers or home stereo equipment connected to the audio dock of Synology Remote (sold separately).
- **Media renderer**: Play music via a Digital Media Renderer (DMR), an AirPlay[1] compatible device, or Bluetooth speakers within your local area network. Once they are found, their device name will appear in the drop-down menu, like Apple TV, Sonos. To connect Bluetooth devices to your Synology NAS, see “Manage Bluetooth Devices”.

[1] AirPlay is supported on specific models only. Visit **www.synology.com** for more information.

Chapter 15

Organize Videos and Record TV Programs with Video Station

Video Station is an ideal video organizer of your collection of movies, TV shows, home videos, and TV recordings, allowing you to watch videos on your computer, DLNA/UPnP-compliant DMAs, AirPlay devices[1], iOS/Android devices, and Windows Phone. In addition to system's default video libraries, you can also create custom libraries and assign access permissions to them. You can live stream and record digital TV programs using a USB DTV dongle with DVB-T, DVB-S/DVB-S2 standard or **HDHomeRun** with DVB-T standard (sold separately) plugged into your Synology NAS, view and edit video metadata whose information is retrieved automatically from the Internet, and create your own watchlist or favorite collection list for quick access.

You can download DS video from Apple's App Store, Android Market, or Windows Marketplace to play videos in Video Station with your iOS/Android device or Windows Phone. For more information about DS video, see "Chapter 22: Communicate with Mobile Devices".

This chapter provides a brief overview of Video Station's features. For more detailed instructions, please see **DSM Help**.

Install Video Station

Go to **Main Menu** > **Package Center** to install Video Station.

Video Station
Keyword
Action
Settings
Movie
TV Show
Home Video
TV Recording
Collection
Movie
(365) Days of Nightmare
2009-07-17
Chaddy Ketchup and Jommy Hong star in director Rosy Flower's wry, nonlinear pathetic tragedy about a man who falls head over heels for a woman who doesn't believe in love. Chris is an aspiring photographer who currently earns his living as a technical writer. Upon encountering...
Act of Translation
2012-02-17
An elite team of TW Generation on a translation mission to recover a new comer.
Angela and Serial Killer
2009-05-04
Corporate manager Angela Langdon investigates a mysterious symbol seared into the chest of a notorious serial killer. She discovers evidence of the unimaginable, the rebirth of an ancient secret brotherhood known as the Synalmighty, the most powerful underground organization e...
The Architect
2011-05-15
TICC, 1927: As silent rocking star Christopher Larry wonders if the arrival of talking pictures will cause him to fade into oblivion, he sparks with Summy Hudson, a young singerset for a big break.
Asabulu
2009-12-10
In the 100th century, a god damn gorgeous beauty Rosaline is dispatched to Mars WooHa on a seducing mission, but becomes cheated by her ex-boyfriend and boy-friends-to-be...
Au Revoir My Love
2010-04-02
Eason (Wayne Yao), who works at his parent's grocery shop by day and spends his nights in a bookstore to learn Spanish, decides to go to Barcelona after his girlfriend, who recently left for Barcelona, dumps him by email. Then the local neighborhood mafia boss offers Eason a f...
1 2 3
66 items

[1] AirPlay is supported on specific models only. Visit **www.synology.com** for more information.

Before You Start

Users belonging to the **administrators** group need to do the following before allowing non-admin users to watch videos or stream live TV programs with Video Station:

- Create video folders for default libraries (including movie, TV show, home video), TV recording, and custom libraries (optional) first to store your videos before managing files with Video Station. To create video folders, click **Settings** > **Library** (for movie/TV show/home video) or **DTV** (for TV recording).
- Plug in a USB DTV dongle[1] to Synology NAS to record digital TV programs and watch digital TV programs broadcast live with the streaming service provided by Video Station.
- Grant permissions for users to access the DTV and AirPlay/DLNA streaming functions at **Settings** > **Privileges**.

More Information

Tips for naming video files:

When placing videos in respective folders, it is recommended you follow the distinctive naming rules for different types of video files in addition to storing them by type. In doing so, not only files can be properly indexed, metadata can also be correctly retrieved from the Internet to update the video info. Naming guidelines for movies and TV episodes are as below:

- **Movie** - It should follow the format: **Movie name (Release year).ext**. For example, Avatar was released in 2009. According to the formula, the best file name is "Avatar 2009.avi".
- **TV Show** - It should follow the format: **TV show name.SXX.EYY.ext**. For example, if you are compiling a video clip, say episode 4 of season 3 for Gossip Girl, the best file name is "Gossip Girl.S03.E04.avi".

Video Station Features

Once properly installed and setup, Video Station provides the below features. For more detailed instructions regarding these and other features, please see **DSM Help**.

Categorize Your Videos

Users belonging to the **administrators** group can categorize video collections into movie, TV show, home video, and TV recording as shown on the left panel of Video Station. Of all the categories, Video Station provides default libraries for movie, TV show, and home video. Videos can also be placed in libraries customized by DSM's administrators with the rights to set access permissions on custom libraries. You can browse videos of each category by different classifications, and manage your videos by adding them to favorites, watchlist, or custom collection for quick access.

Manage Video Metadata

By the time your video files are placed in the respective video folders, metadata and poster image of the videos are collected automatically from the Internet, except for home videos whose metadata must be edited from scratch on your own. Users belonging to the **administrators** group can edit and correct video information; non-admin users can only view video and media information.

Record TV Programs

Users belonging to the **administrators** group can record digital TV programs by setting up a recording schedule; non-admin users can only watch programs which have already been recorded.

Live Stream TV Programs

Users with permissions to control the DTV function can choose which digital TV programs broadcast live to stream; users without the permissions can only watch programs which have already been streamed with the

[1]For the complete list of supported DTV dongles, please visit **Synology's website**.

streaming service provided by Video Station. Once the channel scan is completed, you can stream programs for playback with Video Station's embedded Video Player.

Play Videos

Video Station comes with an embedded player which allows you play videos with once the package is installed on your Synology NAS. In addition to playing videos on your local computer, you can also stream multimedia contents to DLNA/UPnP-compliant DMAs or AirPlay compatible devices for video playback.

For better viewing quality and faster transcoding speed, it is recommended you install **VLC media player (Windows, Linux)** on your local computer for video playback.

Chapter 16

Download Files with Download Station

Download Station is a web-based download application which allows you to download files from the Internet through BT, FTP, HTTP, NZB, Thunder, FlashGet, QQDL, eMule, and Xunlei-Lixian, and subscribe to RSS feeds to keep you updated on the hottest or latest BT. It offers the auto unzip service to help you extract compressed files to your Synology NAS whenever files are downloaded.

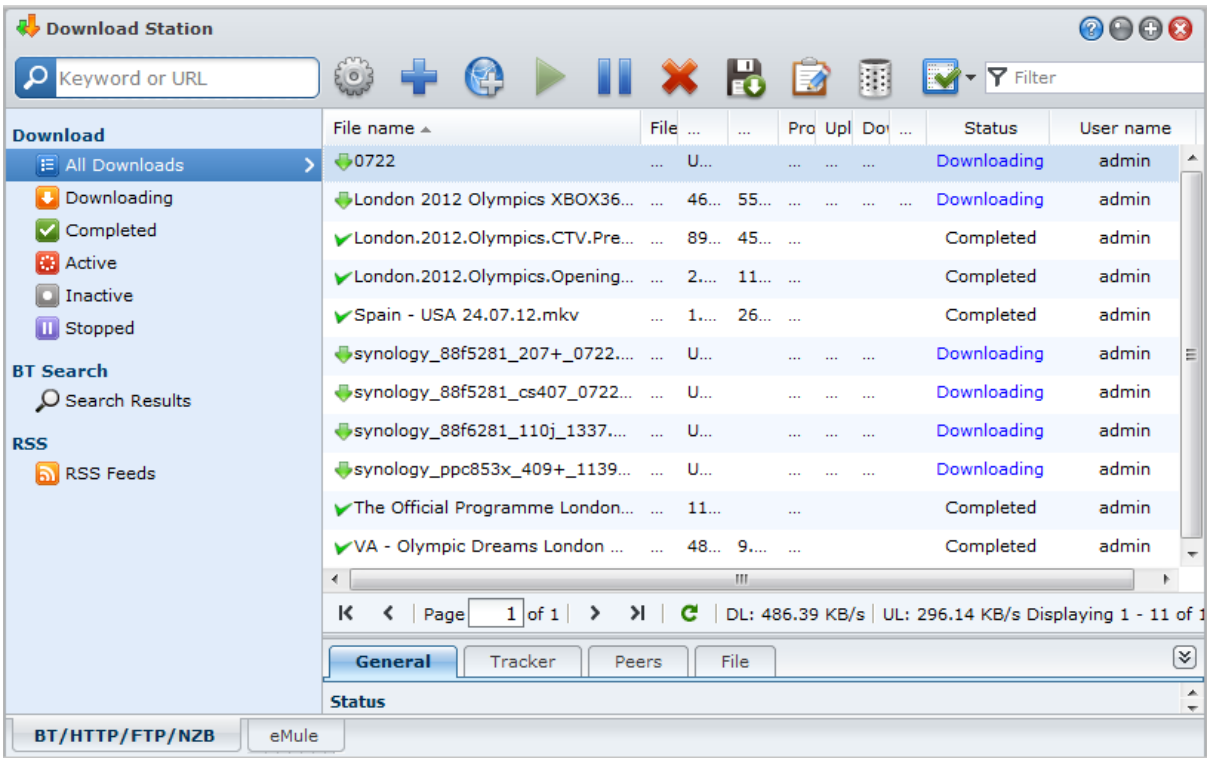
With Download Station, you can download files from multiple file hosting sites, and search for torrent files via system default search engines as well as self-added engines with the BT search function.

You can download DS download from Apple's App Store or Android Market to manage your download files in Download Station with your iOS/Android device. For more information about DS download, see "Chapter 22: Communicate with Mobile Devices".

This chapter provides a brief overview of Download Station's features. For more detailed instructions, please see **DSM Help**.

Install Download Station

Go to **Main Menu** > **Package Center** to install Download Station.



Important: You must comply with all applicable laws and regulations when using Download Station. ***DO NOT*** download or share copyrighted files or software!

Download Station Features

Once properly installed and setup, Download Station provides the below features. For more detailed instructions regarding these and other features, please see **DSM Help**.

Manage Auto Extract Service

Auto Extract service optimizes download task by unzipping downloaded archives automatically to your specified location. Password can be created to extract compressed files if needed.

Click **Settings** (the gear icon) next to the search field at the top and click the **Auto Extract** tab on the left side to manage the settings for Auto Extract.

Set up BT/HTTP/FTP/NZB

By using Download Station to download files, it will automatically detect the protocol your download link is using, and start the download for you.

Click the **BT/HTTP/FTP/NZB** tab at the bottom of Download Station to download files using BT/HTTP/FTP/NZB protocols, and click **Settings** (the gear icon) next to the search field at the top to manage the following BT/HTTP/FTP/NZB settings. For more detailed instructions, please see **DSM Help**.

- **General**: Set download schedule, prioritize process order, and enable notification.
- **Location**: Specify download destination folder and torrent/NZB watched folder.
- **File Hosting**: Manage online file hosting and media sharing websites, where users can upload and share the files or multimedia contents with other people.
- **BT**: Edit settings for downloading BT files.
- **BT Search**: Use the BT Search function to search for torrent files with a list of default BT search engines.
- **FTP/HTTP**: Set the number of simultaneous connections to one FTP server, and limit the maximum download rate of each FTP task.
- **NZB**: Set up a news server to download NZB files.
- **RSS**: Shorten the update interval from 24 hours to your preferred time period for RSS download tasks.

Term Explanation

What is BitTorrent?

BitTorrent (BT) is a peer-to-peer file sharing protocol used for distributing data over the internet. It is one of the most common protocols for transferring large files. To share a file or group of files, a small file containing the metadata and the tracker of the original files (called “torrent”) is created. Users can download “torrent” files and open them with specific software and connect to other users to start file downloads.

What is NZB?

NZB is an XML-based file format for retrieving posts from Usenet servers. The file includes information that your newsreader can use to start downloading. You need to join a newsgroup before you can start downloading files on Usenet.

Create BT/HTTP/FTP/NZB Download Tasks

You can create BT/HTTP/FTP/NZB download tasks by choosing any of the following methods.

- **Create by uploading files**: Upload any of the following files from your local computer to Download Station:
  - Torrent files (.torrent) contain information for downloading files being shared over the BT network.
  - NZB files (.nzb) contain information for retrieving posts from news servers.
  - URL files (.txt) contain a list of HTTP/FTP URLs for downloading the linked files.
- **Create by entering URLs**: You can create download tasks by entering URLs. Click **Add**. In the window that appears, enter the URLs of the file you want to download.

- **Create via BT search**: You can search for torrent files with BT search engines to help you find your favorite downloads more easily. To create download tasks via BT search, enter a keyword in the search field at the top-left corner of BT/HTTP/FTP/NZB.

Create Download Tasks for RSS Feeds

You can use Download Station to download RSS feeds that links to files instead of web pages, such as your favorite audio broadcasts.

More Information

What is RSS?

RSS (Really Simple Syndication, also known as RSS feed) is an alternative way of web browsing. Web publishers often use RSS feeds to publish frequently-updated works, such as blog entries, news headlines, podcasts, photo albums, or audio/video clips.

Can Download Station download all kinds of RSS feeds?

RSS files on the website of BT search engines and iTunes podcasts are generally supported by Download Station.

Some download links in the RSS file are links to a web page rather than the actual file. This kind of RSS files will not be supported. To view and update their RSS feeds, you can use a RSS reader (such as Google Reader) instead.

Manage BT/HTTP/FTP/NZB Download Tasks

You can check the download tasks you just created by clicking any of the following on the left panel, and use the buttons along the top of download queue and the tabs below the queue to manage your tasks. For more detailed instructions, please see **DSM Help**.

- **All Downloads** lists all download tasks.
- **Downloading** lists download tasks that are currently downloading.
- **Completed** lists download tasks that are completely downloaded.
- **Active Downloads** lists download tasks that are currently downloading or seeding.
- **Inactive Downloads** lists download tasks that are erroneous, waiting, or paused by you.
- **Stopped** lists download tasks that are paused by you.

Set up eMule

eMule downloading is not enabled by default. You will need to enable eMule before configuring its settings. To enable eMule, click **Settings** (the gear icon) next to the search field at the top of Download Station, go to **Download Station** > **General** on the left panel.

Now you can click the **eMule** tab at the bottom-left corner of Download Station, and then click the gear icon next to the search field at the top of Download Station to manage the following settings of eMule. For more detailed instructions, please see **DSM Help**.

- **General**: Manage the settings of ED2K server, notification, and protocol obfuscation.
- **Location**: Set the default destination folder for eMule, and share your files on the ED2K network.
- **Connection**: Set up connection for eMule downloads.
- **Bandwidth**: Set upload and download rates and download schedule to limit download and upload bandwidths.

Term Explanation

What is eMule?

eMule is a free peer-to-peer file sharing application which connects to both the eD2k network and the Kad network. Although the transfer speed is usually slow, eMule has a very large user base, and an even larger file sharing base which makes it excellent for finding rare content.

Create eMule Download Tasks

You can create eMule download tasks by choosing any of the following methods.

- **Create by uploading files**: Upload a text file (.txt) containing ED2K links from your local computer to Download Station. To create download tasks by uploading a file, click **Download Queue** on the left panel. Click the **Create** button, choose **Open a file**, and click the button to browse to the text file for upload.
- **Create by entering URLs**: To create download tasks by entering URLs, click **Create**. In the window that appears, choose **Enter URL**, and enter the URLs of the file you want to download.
- **Create via eMule search**: Click **Search** on the left panel to search and download the files your are looking for. To create download tasks, do either of the following.
  - **General search**: Enter a keyword in the search field at the top-left corner of eMule, select a file type and search method.
  - **Advanced search**: Click on the down arrow to the right of the **Start**/**Stop search** button.

Manage eMule Download Tasks

You can manage the download tasks you just created by clicking **Download Queue** on the left panel, and check your shared files currently uploaded to other eMule clients by clicking **Uploading**.

Set up Xunlei-Lixian

Xunlei-Lixian is not enabled by default. You will need to install the **Python** package from **Package Center** before configuring Xunlei-Lixian's settings. To enable Xunlei-Lixian, click **Settings** (the gear icon) next to the search field at the top of Download Station, go to **Download Station** > **General** on the left panel.

Now you can click the **Xunlei-Lixian** tab at the bottom-left corner of Download Station to manage Xunlei-Lixian download tasks. For more detailed instructions, please see **DSM Help**.

Term Explanation
What is Xunlei-Lixian? Xunlei-Lixian is network download service provided by Xunlei company, utilizing their servers to download network resources for registered users. Users can then download the files from Xunlei's remote servers to local storage. Procurement of a Xunlei-Lixian account is required to use the service.

Create Xunlei-Lixian Download Tasks

You can create Xunlei-Lixian download tasks by choosing any of the following methods.

- **Create by uploading files**: Upload a text file (.txt) containing http, ftp, ed2k, thunder or magnet links from your local computer to Download Station. To create download tasks by uploading a file, click the **Create** button, choose **Open a file**, and click the button to browse to the text file for upload.
- **Create by entering URLs**: To create download tasks by entering URLs, click **Create**. In the window that appears, choose **Enter URL**, and enter the URLs of the file you want to download.

Manage Xunlei-Lixian Download Tasks

You can check the download tasks you just created by clicking any of the following on the left panel, and use the buttons along the top of download queue and the tabs below the queue to manage your tasks. For more detailed instructions, please see **DSM Help**.

- **All Downloads** lists all download tasks.
- **Downloading** lists download tasks that are currently downloading.
- **Completed** lists download tasks that are completely downloaded.
- **Expired** lists download tasks that have reached its download time limit.
- **Deleted** lists download tasks that are deleted.

Chapter 17

Safeguard Your Environment with Surveillance Station

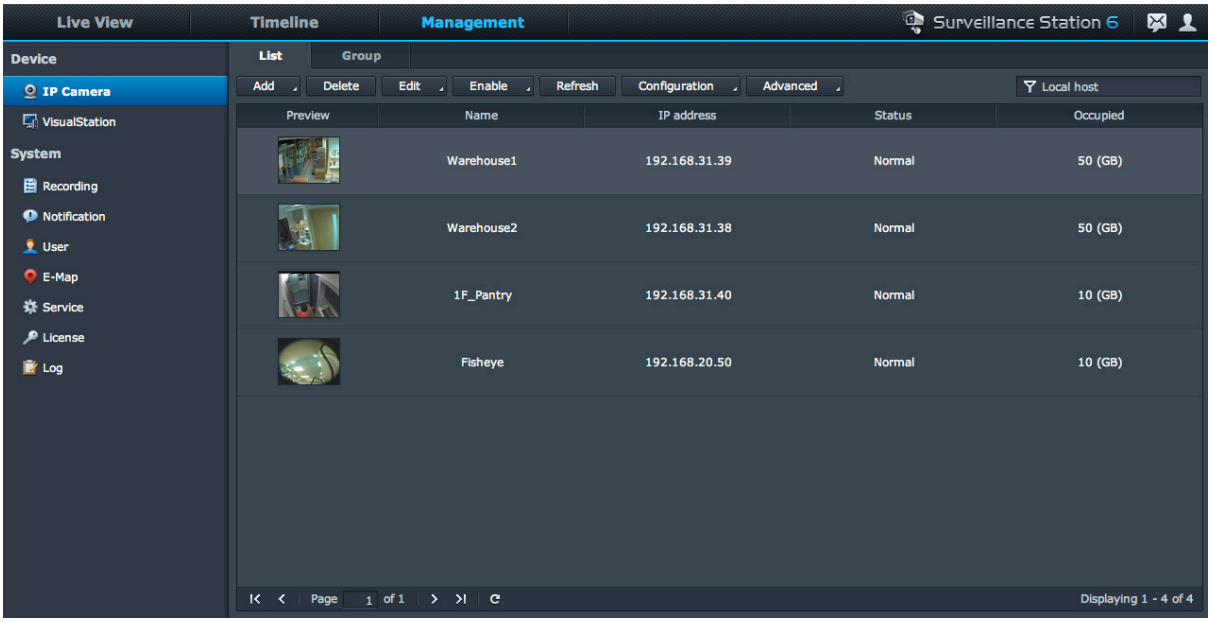
Surveillance Station is a professional Network Video Recording (NVR) software bundled with DiskStation Manager (DSM), allowing you to remotely record and monitor video footages from IP cameras which are paired with your Synology NAS, watch live view videos, set up scheduled recording, playback recorded files via web browser or mobile device for remote monitoring so as to safeguard your home or office environment.

This chapter explains how to install Surveillance Station, manage IP cameras, watch and record live view videos, set up scheduled recording, playback recorded files, and use all the other comprehensive features provided by Surveillance Station. For more detailed instructions, please see Surveillance Station **Help**.

To live view your IP cameras and play recordings from Surveillance Station with your iOS/Android device, download DS cam from Apple's App Store or Android Market. For more information about DS cam, see "Chapter 22: Communicate with Mobile Devices".

Install Surveillance Station

Go to **Main Menu** > **Package Center** to install Surveillance Station. After installation, the **surveillance** shared folder will be created automatically to contain your Surveillance Station data. This shared folder is read-only and can be accessed only by users belonging to the **administrators** group.



Manage Surveillance Station Settings

Click the **Management** tab to configure the following Surveillance Station settings.

Work with Central Management System

Central management system (CMS) allows a host server to monitor the camera live view and recordings of all the recording servers paired with it. By setting up a central management system, you can easily and effectively manage a large Surveillance network via one single server. To enable central management system and set your Synology NAS as either a host server or a recording server, go to the **Service** page.

Once you have set up a CMS host, you can go to the **Server** page to add recording servers and manage them with the CMS service.

Add and Edit Cameras

Go to **IP Camera** > **List** under **Management** to add and edit cameras, set up recording schedule and advanced settings.

Create Camera Groups

To organize multiple cameras into camera groups for easier deployment, go to **IP Camera** > **Group**.

Migrate Cameras

Once you have set up a central management system, you can go to **IP Camera** > **Migration** to initiate a migration procedure which relocates cameras from different servers to one particular server.

> ***Note:*** If you are not a user belonging to the **administrators** group, you may have limited access due to the privilege settings. To learn more about this, go to "Assign Privileges to Users" or contact your administrator.

Play and Manage Recordings

Go to **Recording** > **List** under **Management** to browse all recordings, play them with the Recording Player, and delete, lock, filter, or download the video files.

> ***Note:*** Your IP camera must support alarm recording to be able to use **Alarm Recording**. Alarm recording often relates to the IP camera's digital input and output pin, or DIDO. Refer to its datasheet for pin configuration detail. Alarm recording will begin when the IP camera detects an input pin is triggered.

Export Recordings

Go to **Recording** > **Export** under **Management** to export the recordings to any shared folder or to an external storage device via USB or eSATA interface.

Mount Recordings

Go to **Recording** > **Mount** under **Management** to mount exported recordings. You can mount exported archives onto Surveillance Station. The recordings in mounted archives can be played on the **Recording** and **Timeline** pages.

Use E-Map

E-map is a way of creating a map showing the location of cameras. You can add, edit, and delete e-maps by going to **E-Map** under **Management**. After the e-map is created, you can go to **Live View** and click **Configure** to assign the e-map to a live view layout.

Manage Notification Settings

Go to the **Notification** page under **Management** to have Surveillance Station send you notification messages via email, SMS, mobile devices or instant messaging programs whenever important events occur. You can decide which types of events to be notified at the **Settings** tab and configure notification service settings at **Service**.

Pair VisualStation with Synology NAS

VisualStation is a Synology product that can be paired with your Synology NAS to provide a live view and playback solution. You can access Surveillance Station on a paired Synology NAS with the displays connected to VisualStation, without the need to constantly keep a computer running. Go to the **VisualStation** page to pair VisualStations with your Synology NAS.

For more information about VisualStation, please refer to the *Synology VisualStation User's Guide* available at www.synology.com.

Assign Privileges to Users

Go to the **User** page under **Management** to create DSM local users and apply privilege profiles to them.

Install Camera License

Go to the **License** page under **Management** to manage camera licenses. With **Default License**, your Synology NAS can manage one camera within LAN. You can purchase **Synology Camera License Packs** and then add the license keys here to manage additional cameras.

View Logs

Go to the **Log** page under **Management** to view and manage log records of critical events such as camera disconnection or changes on the camera settings.

Watch Live View

On the **Live View** page, you can watch live feeds up to 49 channels, take snapshot and adjust camera angle via PTZ (Pan/Tilt/Zoom), e-map, manual recording, video analytics, or analytics history. You can also customize your own channel layout to fit your different surveillance scenarios and deployment.

Liveview Analytics lets you track targets during live viewing and recording. You can choose from several analytic types for your IP cameras, and track suspicious events intelligently to trigger smart recording on-the-fly. Each recorded session is archived in an organized fashion for analysis. A simulation mode ensures accurate tuning so you can adjust sensitivity, detection zone, and object size to deliver the best result for individual cameras.

For more detailed instructions, please see Surveillance Station **Help**.

Configure Layout

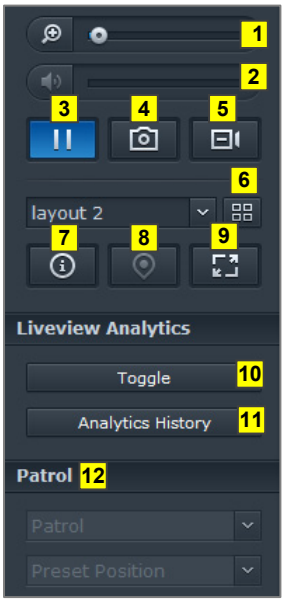
DSM users belonging to the **administrators** group and users with the **manager** privilege can configure layout setting. To customize the layout of camera live views and apply an e-map to a specific layout, click the **Configure** button.

Use PTZ Control

If your camera has PTZ (pan/tilt/zoom) support, you can select a camera and use the **Controller** panel to adjust the camera's direction. Clicking on the home button will restore the camera back to its original position. If you have selected a camera with partial PTZ support, the unsupported functions on the **Controller** panel will be grayed out.

Use Other Functions

On the **Live View** page, you can also use the following functions.



1 To digitally zoom in and out, drag the zoom bar or place the mouse over the live view of a selected camera and then scroll the mouse. You can also zoom digitally by using the scroll button on your mouse, and move by dragging the picture.

2 To adjust volume, drag the volume bar.

3 To pause or resume the playback, click this button.

4 To save the current image, click **Snapshot**.

5 To start manual recording, click **Manual Recording**.

6 To configure layout setting, click **Configure**.

7 Click **Show information**, and the status for each camera will be displayed on the corner of each live view window.

8 To see the corresponding E-Map, click **E-Map**.

9 To see the live view in full screen mode, click **Full screen**.

10 Click **Toggle** to enable Liveview Analytics on the cameras you want for live viewing.

> ***Note:*** Only cameras whose Liveview Analytics settings have been configured at **Camera List** > **Advanced** > **Liveview Analytics** under the **Management** tab can be enabled here. For detailed instructions on Liveview Analytics settings, click the figure icon at the top-right corner and then click **Help**.

11 To playback and see the frequency of Liveview Analytics events, click **Analytics History**.

12 To see the corresponding preset or patrol, click the **Preset Position** or **Patrol** list.

> ***Note:*** Non-Internet Explorer browsers support limited functions only.

Work with Timeline

Surveillance Station allows you to locate the actual recorded footage via Timeline and calendar support. The calendar lets you pick any date to show the day's recording. Using Timeline, you can easily identify videos recorded in different modes, labeled by color on the timeline.

During a recording playback, you can activate Smart Search to track down suspicious targets. Smart Search is an intelligent feature that helps you analyze past recordings effectively and eliminate any potential false alarms. For more detailed instructions, please see Surveillance Station **Help**.

Play Recordings with Timeline

Click the **Timeline** tab to see the timeline page, which offers the Multiple-Recording Playback function, which allows you to simultaneously watch videos recorded on one day or at the same time by different cameras. All recorded videos are lined up in the timeline. You can easily find the recording you are looking for by clicking a specific time on this day or during the hour, and play it with the recording player on this page.

Search for Specific Situations with Smart Search

Click the search icon at the bottom-left corner of the timeline page to enter the **Smart Search** mode. With Smart Search, you can search recordings for specific situations such as general movement or missing/foreign objects on the screen. If the camera lens was occluded or lost its focus by people trying to avoid surveillance, Smart Search can also help you find out when the situations happened.

Chapter 18

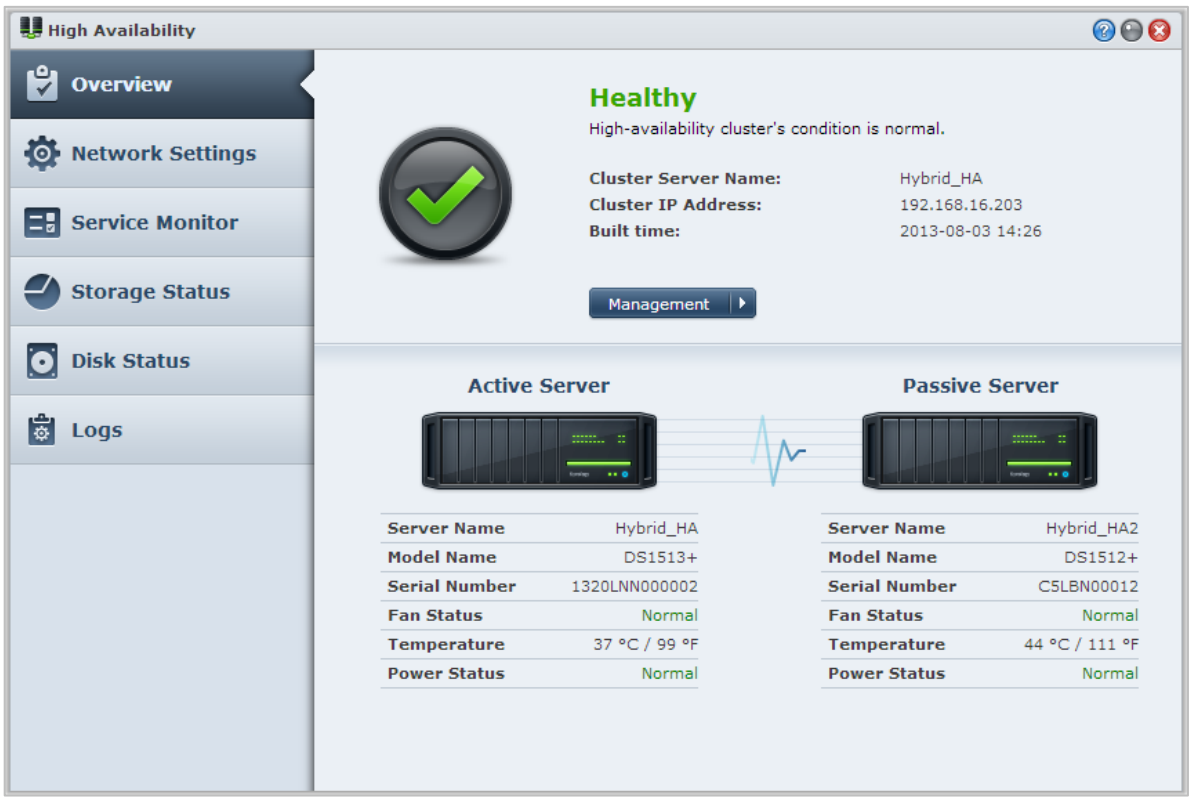
Provide Nonstop Service with Synology High Availability

High Availability refers to a server layout solution designed to reduce interruptions of services caused by server malfunctions. With Synology High Availability, two servers form a “high-availability cluster,” in which one assumes the role of the active server while the other acts as the stand-by server. If the server malfunctions, the stand-by server takes over all services, thus minimizing server downtime.

This chapter provides a brief overview of Synology High Availability’s features. For more detailed instructions, please see **DSM Help**.

Understand Synology High Availability

Implementation of Synology High Availability requires two Synology NAS servers to create a high-availability cluster. One server acts as "active server" and the other acts as "passive server." Once the high-availability cluster is created, data is continuously replicated from the active server to the passive server. All files on the active server will exist in duplicate on the passive server.



Active Server

The active server manages the provision of all services. If errors occur on the active server, you or the system can initiate a switchover to the passive server. In this case, the provision of services is transferred to the passive server, at which point the active server becomes the passive server.

Passive Server

Under normal conditions, the passive server remains in standby mode. Data on the active server is continuously replicated to the passive server. In the event the active server cannot provide services, you or the system can initiate a switchover to the passive server.

Install Synology High Availability

Synology High Availability can be installed by going to **Main Menu** > **Package Center**.

System Requirements

Implementation of Synology High Availability requires two identical Synology NAS servers to act as active and passive servers[1]. Before the two servers are combined into a high-availability cluster, the Synology High Availability Wizard will check for the following hardware and software limitations to ensure that a high-availability cluster can be created.

System Requires

- **Synology NAS:** Both the active and passives servers must be identical models and support Synology High Availability.
- **DSM Version:** The same version of DSM must be installed on both the active and passive servers.
- **Package Version:** The same version of Synology High Availability must be installed on both Synology NAS servers.

Volume and Hard Disk

Please note the following guidelines regarding Disk Group, volume, and hard disk management.

- **Storage Volume:** In order to accommodate data replication, the storage capacity of the passive server must be equal to or larger than the capacity of the active server. It is strongly advised that the storage capacity of both servers be completely identical to reduce the chances of inconsistencies.
- **Number of Disks:** Both the active and passive servers must have the same quantity of hard disks. In addition, hard disk numbering and position must correspond in both servers.
- **SHR Format Unsupported:** SHR format volumes are not supported. Please ensure that the Synology NAS server which will act as the active server does not contain SHR volumes.

Network Environment

Please note the following guidelines regarding network settings.

- **Network Settings:** Both servers of the high-availability cluster must be assigned static IP addresses. Please ensure that your Synology NAS servers are both configured with static rather than DHCP IP addresses. In addition, ensure that the IP addresses of both servers are accessible and belong to the same subnet; otherwise errors might occur when initiating a switchover to the passive server.
- **Number of LAN Ports:** Both servers must have the same number of LAN ports. If your Synology NAS is equipped with additional network card interfaces, these network cards also count as additional LAN ports.
- **PPPoE Unsupported:** Synology High Availability does not support PPPoE. Please ensure that PPPoE is switched off before creating a high-availability cluster.
- **Wi-Fi Unsupported:** Synology High Availability does not support Wi-Fi. Please ensure that Wi-Fi is switched off before creating a high-availability cluster.

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[1] Synology High Availability can only be installed on certain models.

Storage Manager Limitations

Once a high-availability cluster has been created, certain options in Storage Manager will be unavailable.

Available Options: The following options are still available when a high-availability cluster exists:

- Expand storage spaces (e.g. volumes, Block-Level iSCSI LUNs, Disk Groups, RAID Groups, etc).
- Create, delete, or repair volumes and iSCSI LUNs.
- Change iSCSI LUN (File-Level) size and location.
- Change iSCSI LUN target.

Unavailable Options: The following options cannot be performed when a high-availability cluster exists:

- Change RAID types.

Link Aggregation and VLAN

Link Aggregation

To configure Link Aggregation on the Heartbeat or data connection, please set up Link Aggregation on two or more LAN ports at Control Panel > Network > Network Interface before launching the high availability creation wizard. Make sure Link Aggregation settings are identical on both servers (e.g. if you set up Link Aggregation on ports 1 and 2 of the active server, Link Aggregation must be set up on ports 1 and 2 of the passive as well).

Link Aggregation's failover capability can work on both the Heartbeat and data connections. However, load balancing can only work on the data connection.

VLAN

To assign a VLAN ID for the data connection, please go to Control Panel > Network > Network Interface before launching the high-availability creation wizard. Make sure VLAN settings are identical on both servers (e.g. if LAN 1 is set with VLAN ID 1 on the active server, the LAN 1 of the passive server must be set with VLAN 1 as well).

Create a High-Availability Cluster

Once you have checked the above requirements and installed Synology High Availability, the two servers can be combined into a high-availability cluster by going to **Overview** > **Create HA cluster**. A setup wizard will walk you through the steps of creating the high-availability cluster.

More Information

For more detailed information regarding Synology High Availability, please see **DSM Help** or **Synology HA White Paper**.

Chapter 19

Create a Domain Name Server with DNS Server

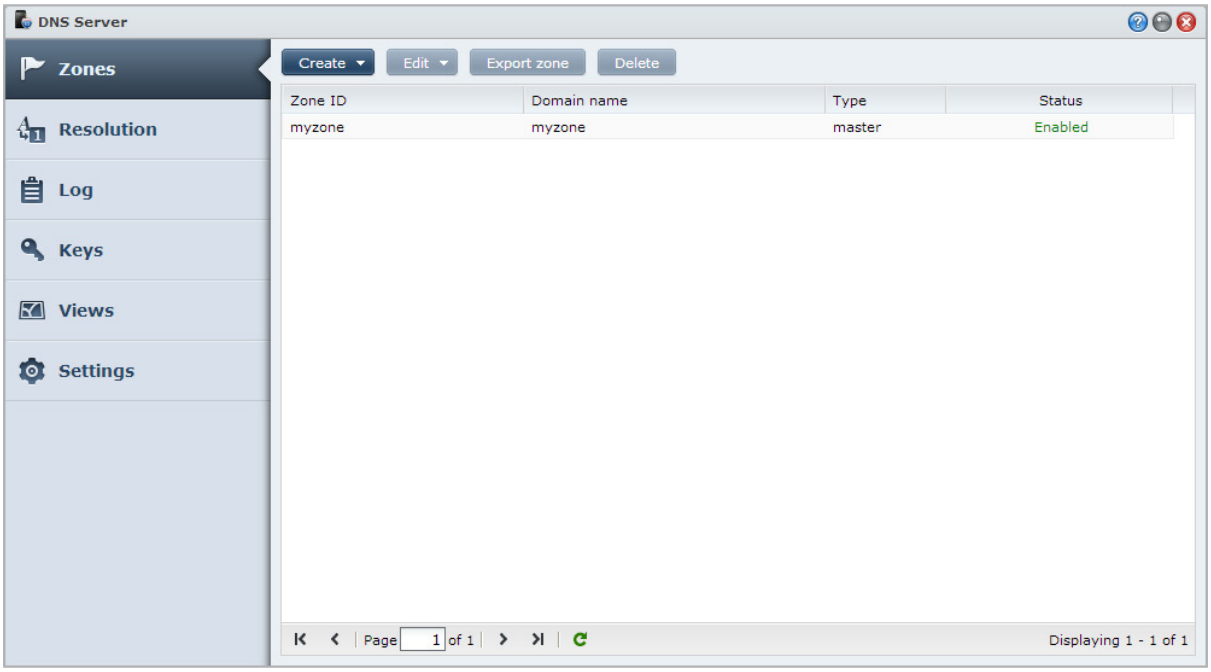
DNS (Domain Name System) is a naming system that facilitates the exchange of data between computers over the Internet and other networks. Its main function is to translate user-friendly domain names (e.g. www.synology.com) into corresponding fixed, public IP addresses (e.g. 120.89.71.100). This function allows users to easily find web pages, computers, or other devices over the Internet or local network.

Synology's DNS Server allows your Synology NAS to become a domain name server, host multiple zones, as well as provide name and IP address resolution services.

This chapter provides a brief explanation of the features of DNS Server. For more details instructions, please see **DSM Help**.

Install DNS Server

DNS Server can be installed by going to **Main Menu** > **Package Center**.



Before You Start

Please see the following notes before using DNS Server:

- **Obtain a fixed, public IP address:** To run DNS Server, you need to acquire a fixed IP address for your Synology NAS.
- **Register a domain name:** Setting up authoritative server functions requires registering your domain name with a domain name provider. For example, if you want to use a domain called example.com, you need to register the domain example with the domain provider of .com domain names.

- **Check firewall or port forwarding settings:** DNS services require the use of TCP and UDP port 53. If your Synology NAS uses a firewall, this port must be opened. If the Synology NAS connects to the Internet through a router, set up port forwarding rules and open TCP and UDP port 53.
- **Register your device:** After you set up DNS Server, remember to register the IP address and other required information of your Synology NAS with the provider of your domain name. Otherwise, clients will be unable to query your Synology NAS over the Internet. Consult your domain name provider for more information.

DNS Server Features

Once properly installed and setup, DNS Server provides the below features. For more detailed instructions regarding these and other features, please see **DSM Help**.

Zones

This page provides options to manage your domain names by creating and modifying zones. A zone refers to a portion of the domain name space for which a domain name server is authoritative and possesses complete information. With DNS Server, zone files can be created, stored, and managed on the Synology NAS.

Zones are divided into three types: Master zones, Slave zones and Forwarding zones. Master zones possess information for zone files. Slave zones copy zone files from master zones (an operation called zone transfer). Forwarding zones forward DNS queries to specific forwarders.

Resolution

You can enable resolution services to allow the Synology NAS to resolve recursive queries. A recursive query occurs when the Synology NAS is not authoritative for a requested domain. In this case, the Synology NAS queries other domain name servers until the information is found, or until the query fails.

For example, if a client queries your Synology NAS for the address of "synology.com," but your Synology NAS is not authoritative for this domain (i.e. you do not own synology.com), it will query other domain name servers or forward the request to specified forwarder servers, and then relay the result back to the sender of the query.

Keys

TSIG (Transfer Signature) keys limit what hosts are allowed to synchronize zone files from the master server. This page displays the keys currently used by DNS Server.

Views

A domain name server can present different information to different clients by implementing views. This function, sometimes called spilt-horizon DNS, can improve security and privacy management of DNS zone records. For example, you have one domain name, but wish to provide different responses to queries from external and internal sources. In such cases, you can create different views with separate resource records.

Chapter

20

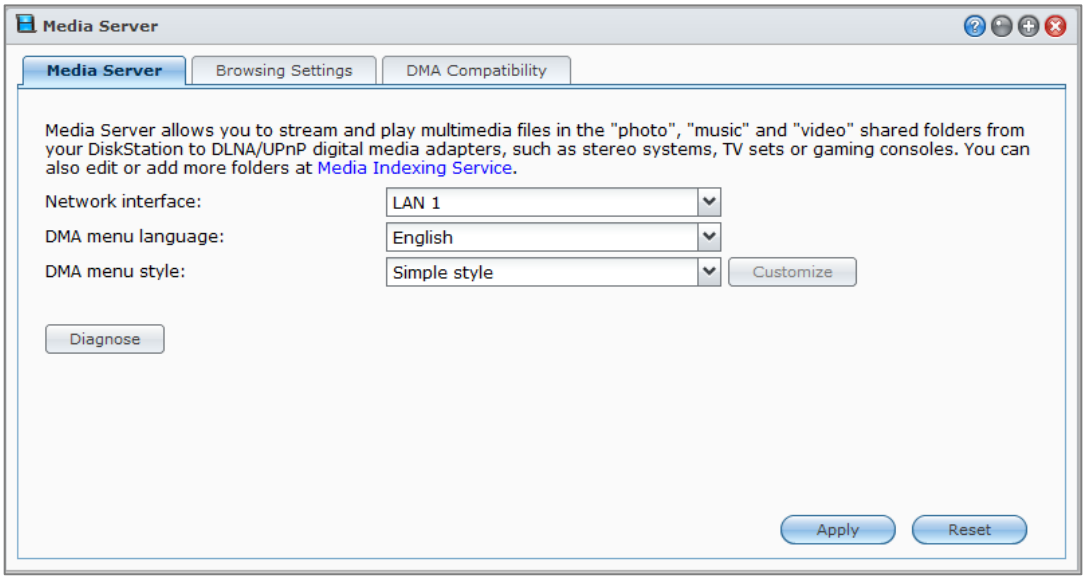
Manage Media Server and iTunes Service

Synology NAS can become a multimedia server on the local area network, allowing computers (using Windows Media Player or iTunes) and DLNA/UPnP home devices (such as stereo system or TV set) to play its multimedia contents.

This chapter explains how to stream multimedia contents from Synology NAS to your computer or other DLNA/UPnP home devices. For more detailed instructions, please see **DSM Help**.

Install DLNA Media Server

Go to **Main Menu** > **Package Center** to install Media Server.


Media Server
Media Server
Browsing Settings
DMA Compatibility
Media Server allows you to stream and play multimedia files in the "photo", "music" and "video" shared folders from your DiskStation to DLNA/UPnP digital media adapters, such as stereo systems, TV sets or gaming consoles. You can also edit or add more folders at Media Indexing Service.
Network interface:
LAN 1
DMA menu language:
English
DMA menu style:
Simple style
Customize
Diagnose
Apply
Reset

Manage DLNA Media Server

Go to **Main Menu** > **Media Server** to browse and play the multimedia contents on Synology NAS via DLNA/UPnP home devices, also known as **Digital Media Adapter (DMA)**. With Media Server, you can easily connect those devices such as TV sets and stereo systems to your home network, and stream multimedia files stored on Synology NAS to the devices to enjoy music, photos, and videos. More indexed folders can be added for sharing at Media Indexing Service. See "Manage Indexed Folder" for more information.

Note: You can play the following multimedia file formats on Synology NAS with DLNA/UPnP enabled DMA[1]:

- **Audio:** AAC, FLAC, M4A, MP3, Ogg Vorbis, PCM, WAV, WMA, WMA VBR, WMA PRO, WMA Lossless
- **Image:** BMP, JPG (jpe, jpeg), GIF, ICO, PNG, PSD, TIF (tiff), UFO, RAW (arw, srf, sr2, dcr, k25, kdc, cr2, crw, nef, mrw, ptx, pef, raf, 3fr, erf, mef, mos, orf, rw2, dng, x3f)
- **Video:** 3GP, 3G2, ASF, AVI, DAT, DivX, DVR-MS, ISO, M2T, M2TS, M4V, MKV, MP4, MPEG1, MPEG2, MPEG4, MTS, MOV, QT, SWF, TP, TRP, TS, VOB, WMV, XviD, RV30, RV40, AC3, AMR, WMA3, RMVB
- **Playlist:** M3U, WPL

Manage Indexed Folder

By default, media files within the **photo**, **video**, and **music** shared folders are indexed by Media Indexing Service. If you want DMA devices and DSM's photo, video, or music applications to access more files on your Synology NAS, you can add more indexed folders at **Main Menu** > **Control Panel** > **Media Indexing Service** > **Indexed Folder**.

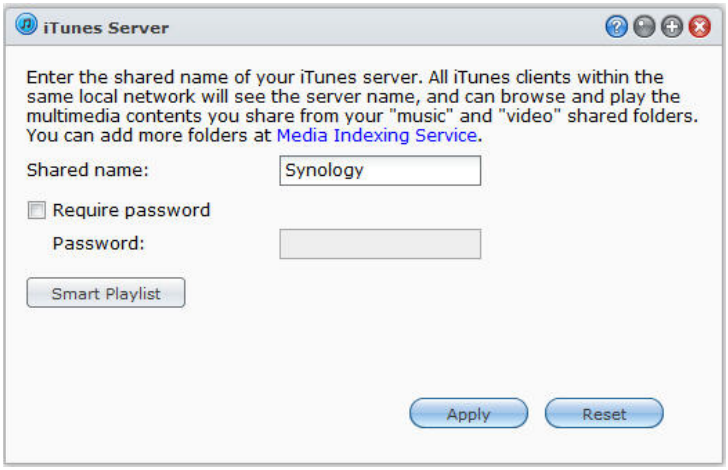
Play Multimedia Contents with DMA Devices

Synology NAS can pair up perfectly with Sony PS3, Xbox 360, and many other DMA devices. You can use those devices to browse and stream multimedia contents from your Synology NAS to your stereo system and TV set.[2]

Note: For information about browsing media server's contents with DMA devices, see the documentation that came with your device.

Install iTunes Server

Go to **Main Menu** > **Package Center** to install iTunes Server.


iTunes Server
Enter the shared name of your iTunes server. All iTunes clients within the same local network will see the server name, and can browse and play the multimedia contents you share from your "music" and "video" shared folders. You can add more folders at Media Indexing Service.
Shared name:
Synology
Require password
Password:
Smart Playlist
Apply
Reset

[1] The actual playback capabilities may vary depending on the DLNA/UPnP client.
[2] For recommended peripheral models, including hard drive, USB printer, DMA, and UPS, please visit **www.synology.com**.

Manage iTunes Server

Go to **Main Menu** > **iTunes Server** to use iTunes service. After it is enabled, all iTunes clients on the same local area network can browse and play songs or videos in the **music** and **video** shared folders on the server. The server will be listed below **Shared** in the iTunes window after the service is enabled.

> ***Note:*** For privacy reasons, iTunes clients are not allowed to view videos in the **photo** shared folder.

Launch iTunes Server

Enter your **Shared name**. Tick **Require password** and enter a password if you want iTunes users to enter a password before accessing your shared folders.

Use Smart Playlist

Click **Smart Playlist** to open the **Smart Playlist** window, where you can create and edit smart playlists on your Synology NAS.

A smart playlist can automatically include certain types of songs that match specific rules. iTunes clients will be able to play the smart playlist you created.

> ***Note:*** You can also create and edit smart playlists with Audio Station. See "Choose Audio Source" for more information.

Re-index Media Files

Click **Re-index** at **Main Menu** > **Control Panel** > **Media Indexing Service**to reconstruct the index structure of the audio files if you find missing files while browsing through Synology NAS with iTunes. The process will be executed in the background.

For more information about the index function provided by Media Indexing Service, click the **Help** button (with a question mark) at the top-right corner at **Main Menu** > **Control Panel** > **Media Indexing Service**, or see "Index Multimedia Files for Applications".

Chapter

21

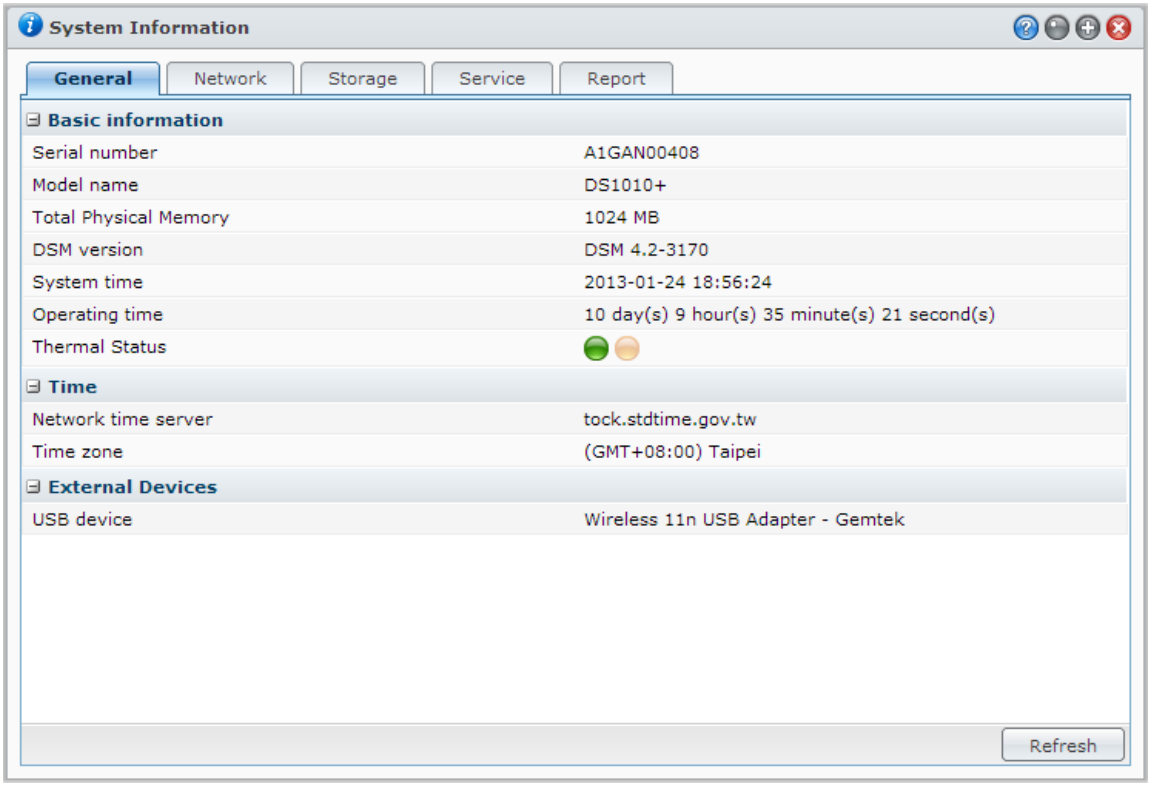
Perform Advanced Management Tasks

Synology DiskStation Manager comes with a variety of management functions, allowing you to check system information, monitor system resources, manage notification services, restore or upgrade DSM, access applications with independent login, index multimedia files for applications and more.

This chapter explains how to comprehend advanced management functions to make sure your Synology NAS is providing the best performance. For detailed instructions, please see **DSM Help**.

Check System Information

System Information provides an overview of the status of the Synology NAS and other connected devices. Go to **Main Menu** > **System Information** to check the below information. For more detailed instructions, please see **DSM Help**.



General

Under the **General** tab, you can see the basic information about your Synology NAS, including serial number, model name, amount of physical memory, DSM version, time information, thermal status, or external devices.

Synology NAS' thermal status is represented by green or orange lights:[1]

- **Green:** Thermal status is normal.
- **Orange:** Synology NAS' thermal temperature is high. You need to cool down your Synology NAS, or it will shut down to prevent system overheat.

The system's general information includes the following:

- **Basic Information**: You can see the detailed information about your Synology NAS here, including serial number, model name, memory size, DSM version, system time, operating time, and thermal status.
- **Time**: You can see the time setting of your Synology NAS here, including time server and time zone. To set up your time server, see "Set Up Time."
- **External Devices**: You can see the model name of your external eSATA or USB devices here.

Network

Under the **Network** tab, you can view the status of network configuration and network interfaces.

The network status includes the following:

- **Basic information**: See the basic information of your Synology NAS' network configuration.
- **[Interface Name]**: See the detailed information of the network interface(s) currently configured on your Synology NAS.

Storage

Under the **Storage** tab, you can check the free or used space of your Synology NAS volumes and check the status of the hard disks.

To check volume usage:

From the pie charts, you can see the free or used space of Synology NAS volumes.

Following are the possible status types of an internal hard disk:

- **Normal**: System partition and volume are available for use on the hard drive.
- **Initialized**: System partition is established, but no volume has been created.
- **Not Initialized**: System partition and volume are not established on the hard drive.
- **No Disk Installed**: No disk is installed in the corresponding hard drive slot.
- **System Partition Failed**: System partition on the hard drive is unavailable. We recommend that you replace the hard drive.
- **Crashed**: Failed to access volume on the hard drive. We recommend that you replace the hard drive.

> ***Note:*** For the system to function normally, there should be at least one disk in **Normal** or **Initialized** status.

Service

Under the **Service** tab, you can see the list of DSM services, which can be enabled or disabled by clicking **Enable** or **Disable** under the **Action** column. The checkmarks under the **Status** column indicate whether the services are enabled.

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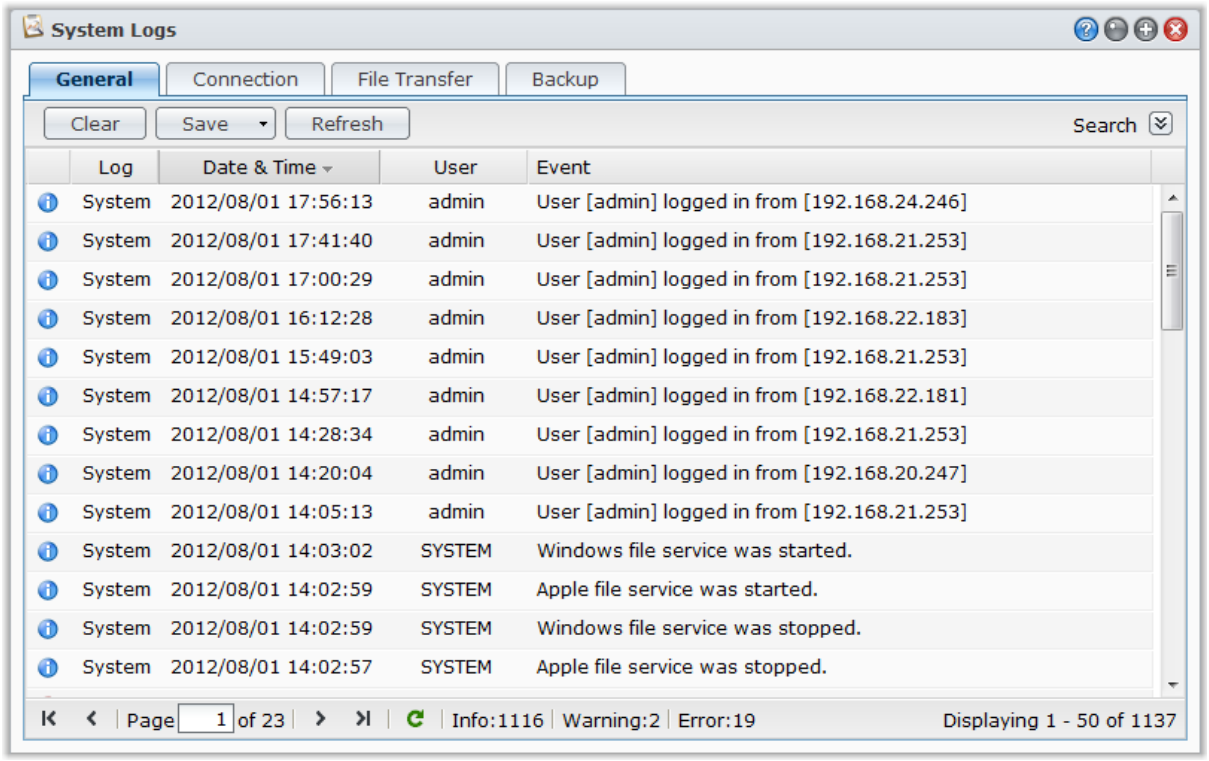
[1] The information is available for specific models only.

Report[1]

Under the **Report** tab, you can collect data and generate reports that provide information about disk usage trends. You can select report types, set a schedule to receive periodic storage reports or generate reports on demand. For more detailed instructions, please see **DSM Help**.

View System Logs

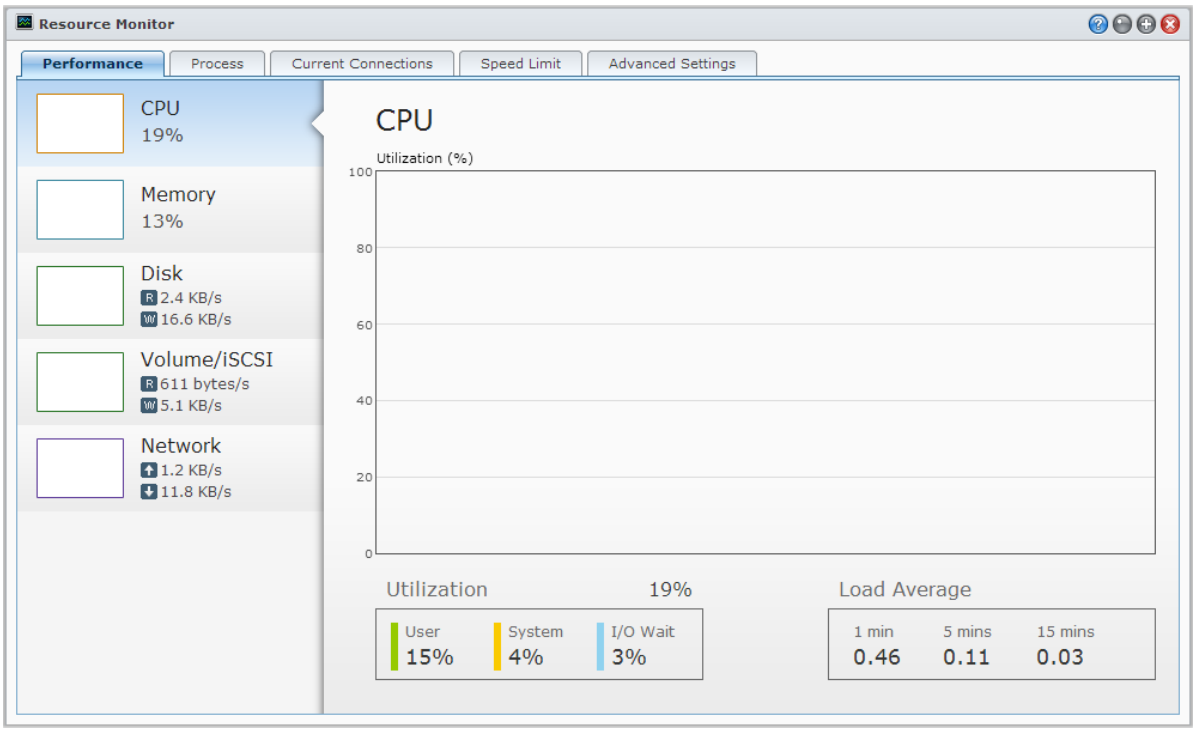
Go to **Main Menu** > **System Logs** to view the log records of Synology NAS services. General system, connection, file transfer (Windows file service, FTP, WebDAV, File Station), and backup (backup, network backup, USBCopy/SDCopy) logs are displayed here. This section also provides options to delete or save logs. For detailed instructions, please see **DSM Help**.


System Logs
General
Connection
File Transfer
Backup
Clear
Save
Refresh
Search
Log
Date & Time
User
Event
System 2012/08/01 17:56:13 admin User [admin] logged in from [192.168.24.246]
System 2012/08/01 17:41:40 admin User [admin] logged in from [192.168.21.253]
System 2012/08/01 17:00:29 admin User [admin] logged in from [192.168.21.253]
System 2012/08/01 16:12:28 admin User [admin] logged in from [192.168.22.183]
System 2012/08/01 15:49:03 admin User [admin] logged in from [192.168.21.253]
System 2012/08/01 14:57:17 admin User [admin] logged in from [192.168.22.181]
System 2012/08/01 14:28:34 admin User [admin] logged in from [192.168.21.253]
System 2012/08/01 14:20:04 admin User [admin] logged in from [192.168.20.247]
System 2012/08/01 14:05:13 admin User [admin] logged in from [192.168.21.253]
System 2012/08/01 14:03:02 SYSTEM Windows file service was started.
System 2012/08/01 14:02:59 SYSTEM Apple file service was started.
System 2012/08/01 14:02:59 SYSTEM Windows file service was stopped.
System 2012/08/01 14:02:57 SYSTEM Apple file service was stopped.
Page 1 of 23
Info:1116 Warning:2 Error:19
Displaying 1 - 50 of 1137

[1] Only available on specific models.

Monitor System Resources

Go to **Main Menu** > **Resource Monitor** to monitor system resources, such as CPU usage, memory usage, disk utilization and network flow. You can choose to monitor the below tabs in real time or view the previous data. For more detailed instructions, please see **DSM Help**.



Performance

Click on **Performance** tab to view the resource utilization data, including CPU, memory, disk, and network. Detailed date, time and information of the chart will be shown upon mouse-over.

Process

Click on the **Process** tab to view the CPU and memory usage of each process in the order of decreasing CPU load. The process status includes **Running**, **Sleeping** and **Stopped**. Linux equivalents of process status are **running**, **stopped/tracing**, **sleeping**.

Current Connections

Under the **Current Connections** tab, you can view a list of users who are currently accessing Synology NAS resources. You can export the current list, kill connections of specific users, or disable user.

Speed Limit

Under the **Speed Limit** tab, you can view and manage the list of file transfer processes that applied speed limit. You can update the lists or kill connections of specifics file transfers.

Advanced Settings

Click on **Advanced Settings** tab to set up additional options, including real time duration and usage settings.

Manage Bluetooth Devices

Go to **Main Menu** > **Control Panel** > **Bluetooth** to manage Bluetooth adapters and connect Bluetooth devices to your Synology NAS. Once connected, some Bluetooth devices, such as speakers or headphones, can be selected as the audio output for Audio Station, allowing you to easily listen to music stored on your Synology NAS. For more detailed instructions, please see **DSM Help**.

Automate Tasks

Go to **Main Menu** > **Control Panel** > **Task Scheduler** to schedule and run services or scripts at pre-defined times. You can create and manage tasks to automatically run user-defined scripts, empty shared folder recycle bins, or start and stop certain services. For more detailed instructions, please see **DSM Help**.

Update DSM

Periodically, Synology releases free DSM updates. Updates may include new features, function improvements, and performance enhancements. Go to **Main Menu** > **Control Panel** > **DSM Update** to keep your Synology NAS up to date.

> ***Important:*** The data saved on the Synology NAS will not be erased during the updating process. However, for security reason, we recommend that you back up the data first.

Checking for Updates

Every time you go to **DSM Update**, the system will check with Synology to see if a new DSM version is available for download, and then display the result in green or red text. In addition, you can manually install updates obtains from Synology's **Download Center** or have the system automatically check for updates.

If you would like to retain the same version of DSM, but still install critical and security updates, click the **Update settings** button and select the **Critical updates only** option. For more detailed instructions, please see **DSM Help**.

Troubleshooting

If you cannot update DSM, the following suggestions might help solve your problem:

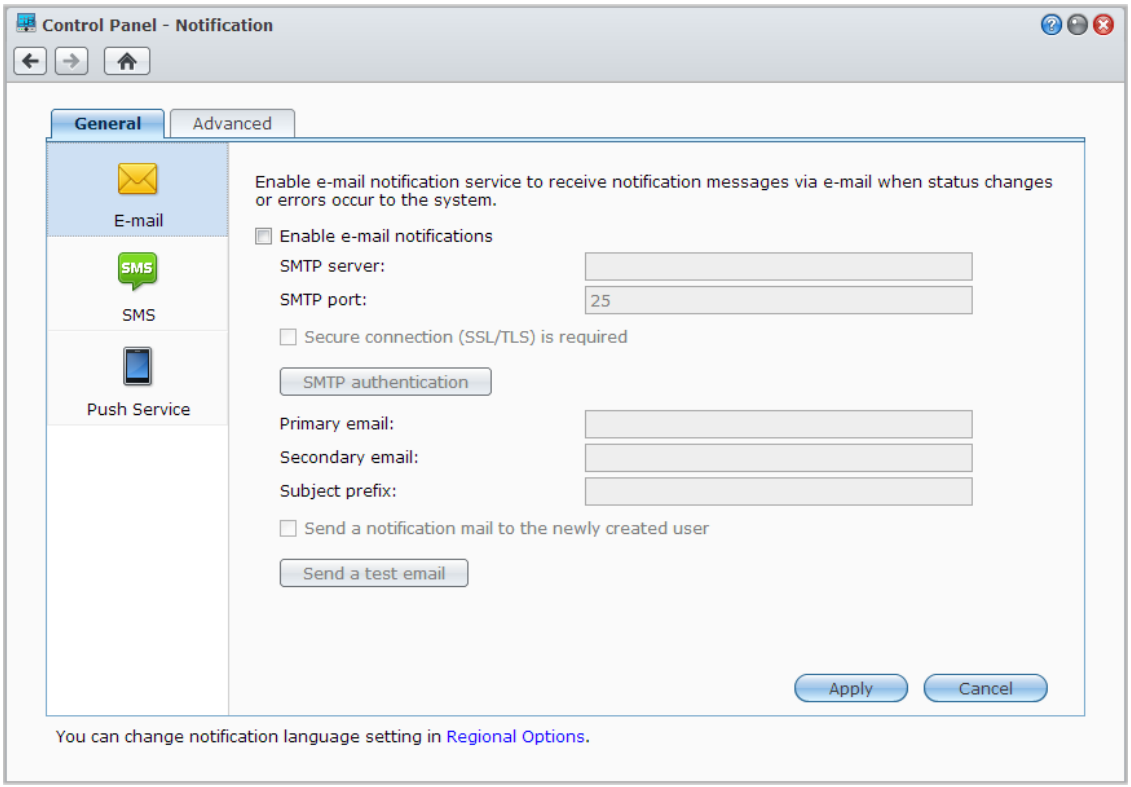
- Check if the upgrading process was interrupted by users, or other unexpected events, such as a power failure.
- Check the DSM version. You can only update the system with a newer DSM version.
- Download the DSM update again because the update file might be corrupted.

If the problem remains, please contact Synology's **Technical Support**.

Receive Event Notifications

Go to **Main Menu** > **Control Panel** > **Notification** and set up Synology NAS to notify you via e-mail, SMS, mobile devices, Windows Live Messenger, or Skype, when status changes or errors occur to the system, for example: connection loss, fan behavior change, power failure, storage volume running out of space, or back and restoration failure, etc.

For more information about how to select notification event types and edit notification messages, click the **Help** button (with a question mark) at the top-right corner, and then go to **Control Panel** > **System** > **Notification** > **Advanced**.



Manage E-mail Notification Service

Click the **E-mail** section to set up email notifications. You can enter your SMTP server information and e-mail addresses to receive notification messages when status changes or errors occur to the system, such as connection loss, fan behavior change, power failure, storage volume running out of space, or back and restoration failure, etc.

More Information

About SMTP server's domain name:

The SMTP server can be an IP address or a domain name. If it is a domain name, please make sure a valid DNS server IP has been entered at **Main Menu** > **Control Panel** > **Network**, and make sure the server is on the Internet.

Manage SMS Notification Service

Click the **SMS** section to set up SMS notifications. You can enable SMS notifications in order for Synology NAS to send you notification messages via SMS when status changes or errors occur to the system, such as connection loss, fan behavior change, power failure, storage volume running out of space, or back/restoration failure, etc.

More Information

SMS URL: case sensitive and must be between 1 and 500 Unicode characters. The number of parameters must be between 4 and 10. This SMS URL is only for setup purposes. No SMS message will be sent after setup is completed. The format of this URL is provided by the SMS service provider, and the URL must include the following parameters: username, password, destination phone, and message content.

Using Clickatell as an example, a sample URL would be the following (reference only):
https://api.clickatell.com/http/sendmsg?user=TestUser&password=TestPassword&api_id=3148203&to=886123456789&text=Hello+world

Please note that in "message content" parameter, the space between "Hello" and "world" will be replaced by the particular character defined by the service provider.

Manage Mobile Devices and Instant Messaging Notifications

Click the **Push Service** section to set up mobile device and instant messaging notifications. You can enable push service to send notification messages to your mobile devices and instant messaging programs (Windows Live Messenger and Skype) via Synology's push service server when status changes or errors occur to the system.

Access Applications with Independent Login

Go to **Main Menu** > **Control Panel** > **Application Portal** to configure connection settings of applications, which allows you to run the applications in an independent browser window without logging in to DSM. These connection settings include customizing portal aliases, HTTP and HTTPS ports.

Note: Applications whose connection settings can be configured via Application Portal are: Audio Station, Download Station, Surveillance Station, Video Station, File Station.

Customized Alias

Applications can be opened in an independent browser window at **[http(s)://DSM server address:DSM server port number [HTTP(S)]/alias name/]** once the portal alias is set up.

Customized HTTP(S) Ports

Applications can be opened in an independent browser window at **[http(s)://DSM server address:customized port number]** once the HTTP(S) port is set up.

Index Multimedia Files for Applications

Go to **Main Menu** > **Control Panel** > **Media Indexing Service** to have Media Indexing Service automatically scan multimedia files, such as photos, music, and videos stored on your Synology NAS, and compile them into the media library to be indexed by multimedia applications: Media Server, Audio Station, Photo Station, and iTunes Server. For more detailed instructions, please see **DSM Help**.

Re-index Media Files

Multimedia data within the installed applications can be scanned and re-indexed for applications. Click **Re-index** to re-construct the index structure of all media files in the indexed folders, both default folders and the ones created by you. The process will be executed in the background.

Reset Admin Password

If you forgot the password for **admin** and are therefore unable to log in to DSM, you can reset the password to blank and set a new password.

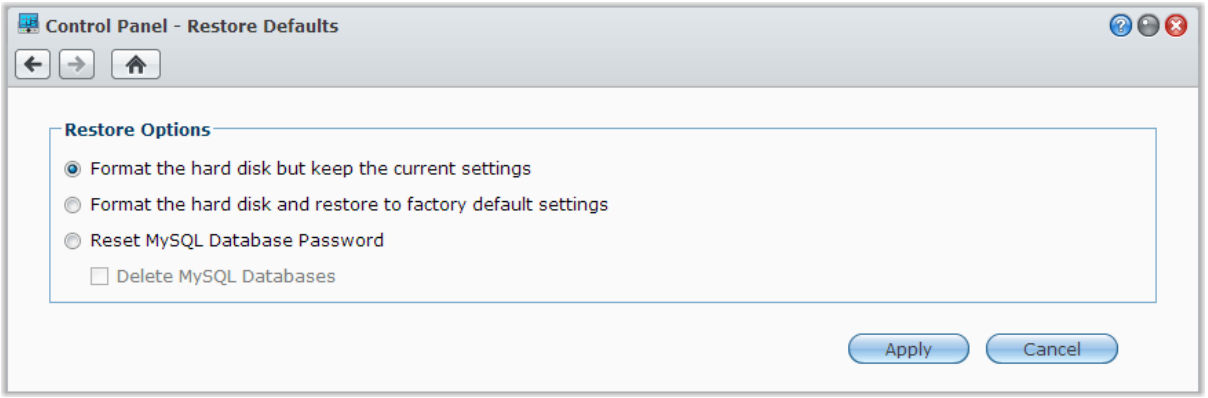
To reset admin's password:

Press and hold the **RESET** button on the back panel of your Synology NAS for 4 seconds until you heard a beep sound.

> ***Note:*** Other than resetting administrator's password, using the **RESET** button will also restore the IP and DNS of Synology NAS to the default value.

Restore Synology NAS to Factory Defaults

Go to **Main Menu** > **Control Panel** > **Restore Defaults** if you want to restore your Synology NAS to factory defaults.


Control Panel - Restore Defaults
Restore Options
Format the hard disk but keep the current settings
Format the hard disk and restore to factory default settings
Reset MySQL Database Password
Delete MySQL Databases
Apply
Cancel

There are three restore options:

- **Format the hard disk but keep the current settings:** All user data in the hard drive will be deleted; whereas the system configurations will remain.
- **Format the hard disk and restore to factory default settings:** All user data in the hard drive will be deleted and the entire system will be restored to default.
- **Reset MySQL Database Password:** The password of the MySQL database will be reset.

  If you wish to delete your MySQL databases, check the **Delete MySQL Databases** checkbox and click **Apply**.

Reinstall Synology NAS

If you want to reinstall your Synology NAS without losing its data, you can use the **RESET** button on the back panel.

To reinstall Synology NAS:

1. Press and hold the **RESET** button for about 4 seconds until the Synology NAS emits a beep sound.
2. Within the next 10 seconds, press and hold **RESET** button for about 4 seconds until the Synology NAS emits a beep sound.
3. Follow the installation instructions in the *Quick Installation Guide* for your model available at Synology's **Download Center** to set up the Synology NAS.

> ***Important:*** The data saved on the Synology NAS will not be erased during the reinstallation. However, for security reason, we strongly recommend that you back up the data first.

Enable SNMP Service

Go to **Main Menu** > **Control Panel** > **SNMP** to enable SNMP service, which allows users to monitor Synology NAS network flow with the network management software.

Currently, SNMPv1, SNMPv2c and SNMPv3 protocols are supported.

Enable Terminal Services

Go to **Main Menu** > **Control Panel** > **Terminal** to enable Terminal service, allowing you to use Telnet or SSH to log in to Synology NAS and modify its settings.

> ***Important:*** Use the Terminal service with caution. Improper manipulation or modification to Synology NAS may result in system malfunction or data loss.

Chapter 22

Communicate with Mobile Devices

As Internet access grows popular on mobile devices, Synology provides you with several creative alternatives to communicate with your Synology NAS using iOS/Android, Windows Phone, or other mobile devices.

Manage DSM Settings with DSM mobile

DSM mobile allows DSM users belonging to the **administrators** group to manage DSM settings and check DSM information with the web browser of an iOS (iPhone, iPad or iPod touch), Android device, or Windows Phone.

To log in to DSM mobile:

1 Use the web browser of your iOS/Android device or Windows Phone to connect to **http://Synology_Server_IP:5000**.

2 Enter your DSM user credentials and tap **Login**.

Note: For more information about DSM mobile, tap **Help** on the home page.

Use iOS, Android, and Windows Apps

The Synology mobile apps are now available on Apple's App Store, Android Market, and Windows Marketplace, allowing you to communicate with Synology NAS wherever Wi-Fi access is available. You can manage files, music, photos, videos, even the surveillance videos on your NAS, sync folders between your mobile devices and NAS, download files, and watch videos on the go.

DS audio

DS audio allows you to access Audio Station with an iOS/Android device or Windows Phone and listen to your favorite music on the go. Besides, the remote controller feature allows you to control Audio Station's music playback when there is an audio output device connected to the USB port of your Synology NAS, such as a USB speaker, or an external speakers or home stereo equipment connected to the audio dock of Synology Remote (sold separately).

DS cam

DS cam allows users who own an iOS/Android device to live view their IP cameras, take snapshots, and view recorded events from your Surveillance Station whenever a network connection is available.

DS cloud

DS cloud is the mobile counterpart to Synology's Cloud Station and allows you to easily sync folders between an iOS/Android device and Synology NAS.

DS download

DS download allows you to access Download Station and download files directly with an iOS/Android device. You can create download tasks by adding a URL, via a built-in mini browser of the application, or the integrated Safari browser for user convenience. Managing basic settings such as transfer speed limits or activating the advanced schedule is also possible.

DS file

DS file allows you to access and manage files on your Synology NAS with an iOS/Android device or Windows Phone.

DS finder

DS finder allows you to monitor or email the status of your Synology NAS, and request it to perform wake on LAN (WOL), restart, shut down, or play beep sounds (to help you quickly find the its location) with an iOS/Android device or Windows Phone.

DS photo+

DS photo+ allows you to access Photo Station with an iOS/Android device or Windows Phone and share your precious moments on the go. Download and save photos from Photo Station to your mobile device so you can enjoy the flashbacks anytime anywhere. You can also use DS photo+ to upload snapshots or videos from your camera phone straight to Photo Station. Besides, you and your friends can interact by leaving comments on any photos, adding more fun to your photo sharing experiences.

DS video

DS video allows you to access Video Station and watch videos both at home and on the move with an iOS/Android device or Windows Phone. You can browse and organize your collections of videos, record digital TV programs available at the place you are located with a USB DTV dongle (sold separately) plugged into your Synology NAS, and manage your recording tasks and schedules.

> ***Note:*** For more information about those mobile Apps, refer to the Help files that come with the Apps.

Use Other Mobile Devices

If you have a mobile device running on Windows Mobile 6.0 (with Internet Explorer Mobile or Opera 9.0 or later), Symbian OS 9.1 (with S60 3rd Edition or later), or iPhone OS 2.3.1 or later, you can use the device to log in to Synology NAS to view photos with Mobile Photo Station and read supported file formats with Mobile File Station around the world where Internet access is available.

Troubleshooting

For any questions about managing your DSM, go to **Main Menu** > **DSM Help** or click the **Help** button (with a question mark) at the top-right corner of every window. For any questions other than that, please visit Synology Inc. website **www.synology.com** for further assistance.

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Section 12. Disclaimer of Certain Damages. IN NO EVENT WILL SYNOLOGY OR ITS LICENSORS BE LIABLE FOR THE COST OF COVER OR FOR ANY INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL OR SIMILAR DAMAGES OR LIABILITIES WHATSOEVER (INCLUDING, BUT NOT LIMITED TO LOSS OF DATA, INFORMATION, REVENUE, PROFIT OR BUSINESS) ARISING OUT OF OR RELATING TO THE USE OR

INABILITY TO USE THE SOFTWARE OR OTHERWISE UNDER OR IN CONNECTION WITH THIS EULA OR THE SOFTWARE, WHETHER BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHER THEORY EVEN IF SYNOLOGY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Section 13. Limitation of Liability. SYNOLOGY'S AND ITS SUPPLIERS' LIABILITY ARISING OUT OF OR RELATING TO THE USE OR INABILITY TO USE THE SOFTWARE OR OTHERWISE UNDER OR IN CONNECTION WITH THIS EULA OR THE SOFTWARE IS LIMITED TO THE AMOUNT ACTUALLY PAID BY YOU FOR THE PRODUCT REGARDLESS OF THE AMOUNT OF DAMAGES YOU MAY INCUR AND WHETHER BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHER THEORY. The foregoing disclaimer of warranties, disclaimer of certain damages and limitation of liability will apply to the maximum extent permitted by applicable law. The laws of some states/jurisdictions do not allow the exclusion of implied warranties or the exclusion or limitation of certain damages. To the extent that those laws apply to this EULA, the exclusions and limitations set forth above may not apply to you.

Section 14. Export Restrictions. You acknowledge that the Software is subject to U.S. export restrictions. You agree to comply with all applicable laws and regulations that apply to the Software, including without limitation the U.S. Export Administration Regulations.

Section 15. U.S. Government License Rights. All Software provided to the U.S. Government is provided with the commercial license rights and restrictions described in this EULA. By installing, copying or using the Software, the U.S. Government agrees that the Software is "commercial computer software" or "commercial computer software documentation" within the meaning of FAR Part 12.

Section 16. Termination. Without prejudice to any other rights, Synology may terminate this EULA if you do not abide by the terms and conditions contained herein. In such event, you must cease use of the Software and destroy all copies of the Software and all of its component parts.

Section 17. Assignment. You may not transfer or assign your rights under this EULA to any third party. Any such transfer or assignment in violation of the foregoing restriction will be void.

Section 18. Applicable Law. Unless expressly prohibited by local law, this EULA is governed by the laws of the State of Washington, U.S.A. without regard to any conflict of law principles to the contrary. The 1980 U.N. Convention on Contracts for the International Sale of Goods or any successor thereto does not apply.

Section 19. Dispute Resolution. Any dispute, controversy or claim arising out of or relating to this Warranty, the Software or services provided by Synology with respect to the Software or the relationship between you and Synology will be resolved exclusively and finally by arbitration under the current commercial rules of the American Arbitration Association if you reside in the United States, except as otherwise provided below. In such cases, the arbitration will be conducted before a single arbitrator, and will be limited solely to the dispute between you and Synology. The arbitration, or any portion of it, will not be consolidated with any other arbitration and will not be conducted on a class-wide or class action basis. The arbitration shall be held in King County, Washington, U.S.A. by submission of documents, by telephone, online or in person as determined by the arbitrator at the request of the parties. The prevailing party in any arbitration or legal action occurring within the United States or otherwise shall receive all costs and reasonable attorneys' fees, including any arbitration fee paid by the prevailing party. Any decision rendered in such arbitration proceedings will be final and binding on the parties, and judgment may be entered thereon in any court of competent jurisdiction. You understand that, in the absence of this provision, you would have had a right to litigate any such dispute, controversy or claim in a court, including the right to litigate claims on a class-wide or class-action basis, and you expressly and knowingly waives those rights and agrees to resolve any disputes through binding arbitration in accordance with the provisions of this Section 19. If you do not reside within the United States, any dispute, controversy or claim described in this Section shall be finally resolved by arbitration conducted by three neutral arbitrators in accordance with the procedures of the R.O.C. Arbitration Law and related enforcement rules. The arbitration shall take place in Taipei, Taiwan, R.O.C., and the arbitration proceedings shall be conducted in English or, if both parties so agree, in Mandarin Chinese. The arbitration award shall be final and binding on the parties and may be enforced in any court having jurisdiction. Nothing in this Section shall be deemed to prohibit or restrict Synology from seeking injunctive relief or seeking such other rights and remedies as it may have at law or equity for any actual or threatened breach of any provision of this EULA relating to Synology's intellectual property rights.

Section 20. Attorneys' Fees. In any arbitration, mediation, or other legal action or proceeding to enforce rights or remedies under this EULA, the prevailing party will be entitled to recover, in addition to any other relief to which it may be entitled, costs and reasonable attorneys' fees.

Section 21. Severability. If any provision of this EULA is held by a court of competent jurisdiction to be invalid, illegal, or unenforceable, the remainder of this EULA will remain in full force and effect.

Section 22. Entire Agreement. This EULA sets forth the entire agreement of Synology and you with respect to the Software and the subject matter hereof and supersedes all prior and contemporaneous understandings and agreements whether written or oral. No amendment, modification or waiver of any of the provisions of this EULA will be valid unless set forth in a written instrument signed by the party to be bound thereby.

SYNOLOGY, INC.
LIMITED PRODUCT WARRANTY

THIS LIMITED WARRANTY ("WARRANTY") APPLIES TO THE PRODUCTS (AS DEFINED BELOW) OF SYNOLOGY, INC. AND ITS AFFILIATES, INCLUDING SYNOLOGY AMERICA CORP AND SYNOLOGY UK LTD., (COLLECTIVELY, "SYNOLOGY"). YOU ACCEPT AND AGREE TO BE BOUND BY THE TERMS OF THIS WARRANTY BY OPENING THE PACKAGE CONTAINING AND/OR USING THE PRODUCT. IF YOU DO NOT AGREE TO THE TERMS OF THIS WARRANTY, DO NOT USE THE PRODUCT. INSTEAD, YOU MAY RETURN THE PRODUCT TO THE RESELLER WHERE YOU PURCHASED IT FOR A REFUND IN ACCORDANCE WITH THE RESELLER'S APPLICABLE RETURN POLICY.

Section 1. Definitions. (a) New Product, including: (1) "Category I Product" means Synology product models RS810+, RS810RP+, and RX410 (2) "Category II Product" means Synology product models RS2414+, RS2414RP+, RS814, RS214, RS10613xs+, RS3413xs+, RS3412xs, RS3412RPxs, RS3411xs, RS3411RPxs, RS2212+, RS2212RP+, RS2211+, RS2211RP+, RS812+, RS812RP+, RS812, RS411, RS409RP+, RS409+, RS409, RS408-RP, RS408, RS407, RS212, DS3612xs, DS3611xs, DS2413+, DS2411+, DS1813+, DS1812+, DS1513+, DS1512+, DS1511+, DS1010+, DS713+, DS712+, DS710+, DS509+, DS508, RX1213sas, RX1211, RX1211RP, RX4, DX1211, DX513, DX510, DX5, VS240HD and RAM Module (1GB/2GB/4GB/8GB). (3) "Category III Product" means all other Synology product models purchased by Customer after March 1, 2008. (4) "Category IV Product" means all other Synology product models purchased by Customer before February 29, 2008. (b) "Refurbished Product" means all Synology products which have been refurbished and sold directly by Synology through Online Store, not including those sold by an authorized Synology distributor or reseller. (c) "Customer" means the original person or entity purchasing the Product from Synology or an authorized Synology distributor or reseller. (d) "Online Store" means a online shop operated by Synology or Synology's affiliate. (e) "Product" means a New Product or a Refurbished Product and any hardware incorporated into the Product by Synology and any accompanying documentation. (f) "Software" means the Synology proprietary software that accompanies the Product when purchased by Customer, is downloaded by Customer at the Web Site, or is pre-installed on the Product by Synology, and includes any firmware, associated media, images, animations, video, audio, text and applets incorporated into the software or Product and any updates or upgrades to such software. (g) "Warranty Period" means the period commencing on the date the Product is purchased by Customer and ending (1) five years after such date for Category I Products; (2) three years after such date for Category II Products; or (3) two years after such date for Category III Products; or (4) one year after such date for Category IV Products; or (5) 90 days after such date for Refurbished Products, except for those sold as "as is" or with "no warranty" on Online Store. (h) "Web Site" means the Synology web site located at **www.synology.com**.

Section 2. Limited Warranty and Remedies

2.1 Limited Warranty. Subject to Section 2.7, Synology warrants to Customer that each Product (a) will be free of material defects in workmanship and (b) under normal use will perform substantially in accordance with Synology's published specifications for the Product during the Warranty Period. Synology warrants the Software as set forth in the accompanying end user license agreement provided with the Product, if any. Synology provides no warranty to Refurbished Product sold as "as is" or with "no warranty" on Online Store.

2.2 Product Registration. Customers may register Products with Synology and may obtain the manufacturing date for Category I Products, Category II Products and Category III Products at the Web Site. The failure to register a Product at the Web Site will not diminish the warranty rights set forth in Section 2.1. Synology is not responsible for Customer's failure to identify the manufacturing date of any Product.

2.3 Exclusive Remedy. If Customer gives notice of noncompliance with any of the warranties set forth in Section 2.1 within the applicable Warranty Period in the manner set forth below, then, upon verification of the noncompliance by Synology, Synology will, at Synology's option: (a) use commercially reasonable efforts to repair the Product, or (b) replace the noncomplying Product or part thereof upon return of the complete Product in accordance with Section 2.4 The foregoing sets forth Synology's entire liability and Customer's sole and exclusive remedy for any breach of warranty under Section 2.1 or any other defect or deficiency in the Product. Customer will reasonably assist Synology to diagnose and validate any nonconformity with the Product. The warranty set forth in Section 2.1 does not include: (1) any warranty relating to the Software; (2) physical installation or removal of the Product from Customer's site; (3) visits to Customer's site; (4) labor necessary to effect repairs or replace defective parts other than during Synology's or its contracted service providers' normal local business hours, exclusive of weekends and service providers' holidays; (5) any work with any third party equipment or software; (6) any warranty of the hard disk if installed by Customer or any other third party; or (7) any warranty of compatibility with the hard disk.

2.4 Return. Any Product returned by Customer under Section 2.3 must be assigned a Return Merchandise Authorization ("RMA") number by Synology before shipment and must be returned in accordance with Synology's then current RMA procedures. Customer may contact any authorized Synology distributor or reseller or Synology Support to obtain assistance in obtaining an RMA, and must provide proof of purchase and product serial number when asking for such assistance. For warranty claims, Customer must return the complete Product to Synology in accordance with this Section 2.4 to be eligible for coverage under this Warranty. Any Product returned without an RMA number, or any Product that has been disassembled (except under the direction of Synology) will be refused and returned to Customer at Customer's expense. Any Product that has been assigned a RMA number must be returned in the same condition as it was received from Synology to the address designated by Synology, freight pre-paid, in packaging sufficient to protect the contents thereof and with the RMA number prominently displayed on the outside of the box. Customer is responsible for insurance and risk of loss with respect to returned items until they are properly received by Synology. A Product issued a RMA number must be returned within fifteen (15) days after issuance of the applicable RMA number.

2.5 Replacement by Synology. If Synology elects to replace any Product under this Warranty set forth in Section 2.1, then Synology will ship a replacement Product at Synology's expense via the shipping method selected by Synology after receipt of the nonconforming Product returned in accordance with Section 2.4 and validation by Synology that the Product does not conform to the warranty. Replacement Product will be new or serviceably used, comparable in function and performance to the original Product and warranted for the remainder of the original Warranty Period or thirty (30) days after it is shipped to

Customer, whichever period is longer Any Product found by Synology to be non-defective will be returned to Customer.

2.6 Support. During the Warranty Period, Synology will make available to Customer the support services. Following the expiration of the applicable Warranty Period, support for Products may be available from Synology upon written request.

2.7 Exclusions. The foregoing warranties and warranty obligations do not apply to any Product that (a) has been installed or used in a manner not specified or described in the Product specifications; (b) has been repaired, modified or altered by anyone other than Synology or its agent or designee; (c) has been in any way misused, abused, or damaged; (d) has been used with items not provided by Synology other than the hardware or software for which the Product is designed; or (e) otherwise fails to conform to the Product specifications and such failure is attributable to causes not within or under Synology's control. Further, the foregoing warranties will be void if (1) Customer disassembles the Product except as authorized by Synology; (2) Customer fails to implement any correction, modification, enhancement, improvement or other update made available to Customer by Synology; or (3) Customer implements, installs or uses any correction, modification, enhancement, improvement or other update made available by any third party. The warranty set forth in Section 2.1 will terminate upon Customer's sale or transfer of the Product to a third party.

2.8 Disclaimer of Warranties. THE WARRANTIES, OBLIGATIONS, AND LIABILITIES OF SYNOLOGY AND THE REMEDIES OF CUSTOMER SET FORTH IN THIS WARRANTY ARE EXCLUSIVE AND IN SUBSTITUTION FOR, AND CUSTOMER HEREBY WAIVES, RELEASES AND DISCLAIMS, ALL OTHER WARRANTIES, OBLIGATIONS AND LIABILITIES OF SYNOLOGY AND ALL OTHER RIGHTS, CLAIMS AND REMEDIES OF CUSTOMER AGAINST SYNOLOGY, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE, WITH RESPECT TO THE PRODUCT, ACCOMPANYING DOCUMENTATION OR SOFTWARE AND ANY OTHER GOODS OR SERVICES DELIVERED UNDER THIS WARRANTY, INCLUDING, BUT NOT LIMITED TO ANY: (A) IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE; (B) IMPLIED WARRANTY ARISING FROM COURSE OF PERFORMANCE, COURSE OF DEALING, OR USAGE OF TRADE; (C) CLAIM OF INFRINGEMENT OR MISAPPROPRIATION; OR (D) CLAIM IN TORT (WHETHER BASED ON NEGLIGENCE, STRICT LIABILITY, PRODUCT LIABILITY OR OTHER THEORY). SYNOLOGY MAKES NO GUARANTEE AND SPECIFICALLY DISCLAIMS ANY WARRANTY THAT THE DATA OR INFORMATION STORED ON ANY SYNOLOGY PRODUCT WILL BE SECURE AND WITHOUT RISK OF DATA LOSS. SYNOLOGY RECOMMENDS THAT CUSTOMER TAKES APPROPRIATE MEASURES TO BACK UP THE DATA STORED ON THE PRODUCT. SOME STATES/JURISDICTIONS DO NOT ALLOW LIMITATIONS ON IMPLIED WARRANTIES, SO THE ABOVE LIMITATION MAY NOT APPLY TO CUSTOMER.

Section 3. Limitations of Liability

3.1 Force Majeure. Synology will not be liable for, or be considered to be in breach of or default under this Warranty on account of, any delay or failure to perform as required by this Warranty as a result of any cause or condition beyond its reasonable control (including, without limitation, any act or failure to act by Customer).

3.2 Disclaimer of Certain Damages. IN NO EVENT WILL SYNOLOGY OR ITS SUPPLIERS BE LIABLE FOR THE COST OF COVER OR FOR ANY INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL OR SIMILAR DAMAGES OR LIABILITIES WHATSOEVER (INCLUDING, BUT NOT LIMITED TO LOSS OF DATA, INFORMATION, REVENUE, PROFIT OR BUSINESS) ARISING OUT OF OR RELATING TO THE USE OR INABILITY TO USE THE PRODUCT, ANY ACCOMPANYING DOCUMENTATION OR SOFTWARE AND ANY OTHER GOODS OR SERVICES PROVIDED UNDER THIS WARRANTY, WHETHER BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHER THEORY EVEN IF SYNOLOGY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

3.3 Limitation of Liability. SYNOLOGY'S AND ITS SUPPLIERS' LIABILITY ARISING OUT OF OR RELATING TO THE USE OR INABILITY TO USE THE PRODUCT, ANY ACCOMPANYING DOCUMENTATION OR SOFTWARE AND ANY OTHER GOODS OR SERVICES PROVIDED UNDER THIS WARRANTY IS LIMITED TO THE AMOUNT ACTUALLY PAID BY CUSTOMER FOR THE PRODUCT REGARDLESS OF THE AMOUNT OF DAMAGES CUSTOMER MAY INCUR AND WHETHER BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHER THEORY. The foregoing disclaimer of certain damages and limitation of liability will apply to the maximum extent permitted by applicable law. The laws of some states/jurisdictions do not allow exclusion or limitation of certain damages. To the extent that those laws apply to the Product, the exclusions and limitations set forth above may not apply to Customer.

Section 4. Miscellaneous

4.1 Proprietary Rights. The Product and any accompanying Software and documentation provided with the Product include proprietary and intellectual property rights of Synology and its third party suppliers and licensors. Synology retains and reserves all right, title, and interest in the intellectual property rights of the Product, and no title to or ownership of any intellectual property rights in or to the Product, any accompanying Software or documentation and any other goods provided under this Warranty is transferred to Customer under this Warranty. Customer will (a) comply with the terms and conditions of the Synology end user license agreement accompanying any Software furnished by Synology or an authorized Synology distributor or reseller; and (b) not attempt to reverse engineer any Product or component thereof or accompanying Software or otherwise misappropriate, circumvent or violate any of Synology's intellectual property rights.

4.2 Assignment. Customer will not assign any of its rights under this Warranty directly, by operation of law or otherwise, without the prior written consent of Synology.

4.3 No Additional Terms. Except as expressly permitted by this Warranty, neither party will be bound by, and each party specifically objects to, any term, condition or other provision that conflicts with the provisions of this Warranty that is made by the other party in any purchase order, receipt, acceptance, confirmation, correspondence or otherwise, unless each party specifically agrees to such provision in writing. Further, if this Warranty conflicts with any terms or conditions of any other agreement entered into by the parties with respect to the Product, this Warranty will prevail unless the other agreement specifically references the sections of this Warranty that it supersedes.

4.4 Applicable Law. Unless expressly prohibited by local law, this Warranty is governed by the laws of the State of Washington, U.S.A. without regard to any conflict of law principles to the contrary. The 1980 U.N. Convention on Contracts for the International Sale of Goods or any successor thereto does not apply.

4.5 Dispute Resolution. Any dispute, controversy or claim arising out of or relating to this Warranty, the Product or services provided by Synology with respect to the Product

or the relationship between Customers residing within the United States and Synology will be resolved exclusively and finally by arbitration under the current commercial rules of the American Arbitration Association, except as otherwise provided below. The arbitration will be conducted before a single arbitrator, and will be limited solely to the dispute between Customer and Synology. The arbitration, or any portion of it, will not be consolidated with any other arbitration and will not be conducted on a class-wide or class action basis. The arbitration shall be held in King County, Washington, U.S.A. by submission of documents, by telephone, online or in person as determined by the arbitrator at the request of the parties. The prevailing party in any arbitration or legal action occurring within the United States or otherwise shall receive all costs and reasonable attorneys' fees, including any arbitration fee paid by the prevailing party. Any decision rendered in such arbitration proceedings will be final and binding on the parties, and judgment may be entered thereon in any court of competent jurisdiction. Customer understands that, in the absence of this provision, Customer would have had a right to litigate any such dispute, controversy or claim in a court, including the right to litigate claims on a class-wide or class-action basis, and Customer expressly and knowingly waives those rights and agrees to resolve any disputes through binding arbitration in accordance with the provisions of this Section 4.5. For Customers not residing within the United States, any dispute, controversy or claim described in this section shall be finally resolved by arbitration conducted by three neutral arbitrators in accordance with the procedures of the R.O.C. Arbitration Law and related enforcement rules. The arbitration shall take place in Taipei, Taiwan, R.O.C., and the arbitration proceedings shall be conducted in English or, if both parties so agree, in Mandarin Chinese. The arbitration award shall be final and binding on the parties and may be enforced in any court having jurisdiction. Nothing in this Section shall be deemed to prohibit or restrict Synology from seeking injunctive relief or seeking such other rights and remedies as it may have at law or equity for any actual or threatened breach of any provision of this Warranty relating to Synology's intellectual property rights.

4.6 Attorneys' Fees. In any arbitration, mediation, or other legal action or proceeding to enforce rights or remedies under this Warranty, the prevailing party will be entitled to recover, in addition to any other relief to which it may be entitled, costs and reasonable attorneys' fees.

4.7 Export Restrictions. You acknowledge that the Product may be subject to U.S. export restrictions. You will comply with all applicable laws and regulations that apply to the Product, including without limitation the U.S. Export Administration Regulations.

4.8 Severability. If any provision of this Warranty is held by a court of competent jurisdiction to be invalid, illegal, or unenforceable, the remainder of this Warranty will remain in full force and effect.

4.9 Entire Agreement. This Warranty constitutes the entire agreement, and supersedes any and all prior agreements, between Synology and Customer related to the subject matter hereof. No amendment, modification or waiver of any of the provisions of this Warranty will be valid unless set forth in a written instrument signed by the party to be bound thereby.